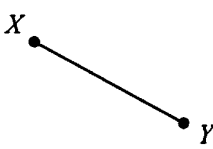
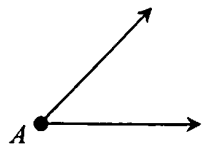
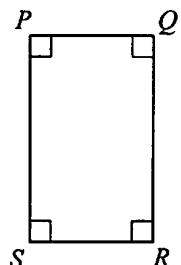
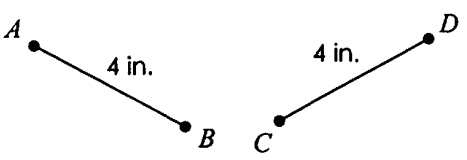
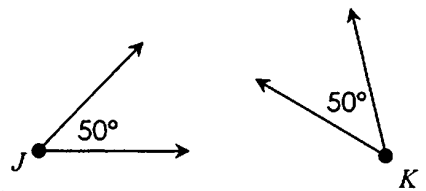
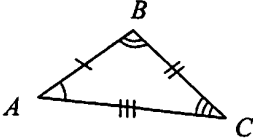
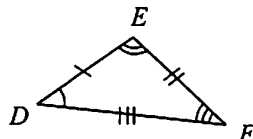
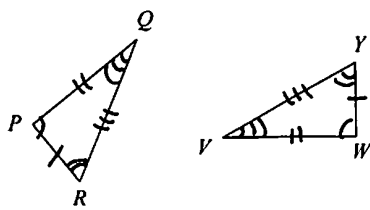


Name:	Date:
Topic:	Class:

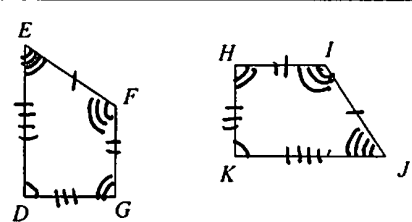
Main Ideas/Questions	Notes/Examples	
SEGMENT	<ul style="list-style-type: none"> A segment is a line with <u>two endpoints</u>. Name the segment to the right: <u>\overline{XY}</u> 	
ANGLE	<ul style="list-style-type: none"> An angle is formed by <u>two rays</u> that meet at a common endpoint, called the <u>vertex</u>. Name the angle to the right: <u>$\angle A$</u> 	
POLYGON	<ul style="list-style-type: none"> A polygon is a <u>closed</u> <u>figure</u> formed at least three line segments called <u>sides</u>. Examples: Triangles, Rectangles, Parallelograms, Trapezoids, Pentagons, Hexagons, etc. 	
CONGRUENT Segments & Angles	<ul style="list-style-type: none"> Congruent means to have the <u>same measure</u>. Symbol for congruent: <u>\cong</u> 	
	Congruent Line Segments	Congruent Angles
	Segments are congruent if they have the same length. 	Angles are congruent if they have the same measure. 
	Notation: $\overline{AB} \cong \overline{CD}$	Notation: $\angle J \cong \angle K$
CONGRUENT Polygons	Congruent polygons have the same <u>angles</u> and <u>sides</u> . <div style="display: flex; justify-content: space-around; align-items: center;">   </div> <ul style="list-style-type: none"> All corresponding sides are congruent. ($\overline{AB} \cong \overline{DE}$, $\overline{BC} \cong \overline{EF}$, $\overline{AC} \cong \overline{DF}$) All corresponding angles are congruent. ($\angle A \cong \angle D$, $\angle B \cong \angle E$, $\angle C \cong \angle F$) 	

The figures below are congruent. List all pairs of congruent sides and angles.

1.



2.



Sides

Angles

Sides

Angles

$$\overline{PR} \cong \overline{WY}$$

$$\angle P \cong \angle W$$

$$\overline{RQ} \cong \overline{YV}$$

$$\angle R \cong \angle Y$$

$$\overline{PQ} \cong \overline{WV}$$

$$\angle Q \cong \angle V$$

$$\overline{DG} \cong \overline{KH}$$

$$\angle D \cong \angle K$$

$$\overline{GF} \cong \overline{HI}$$

$$\angle G \cong \angle H$$

$$\overline{FE} \cong \overline{IJ}$$

$$\angle F \cong \angle I$$

$$\overline{ED} \cong \overline{JK}$$

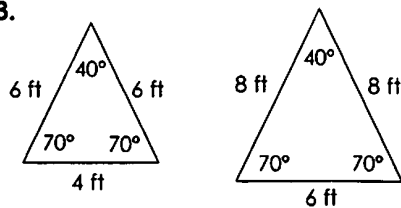
$$\angle E \cong \angle J$$

ARE WE CONGRUENT?

HINT: If one figure can be laid over the other so they match perfectly, they are congruent :)

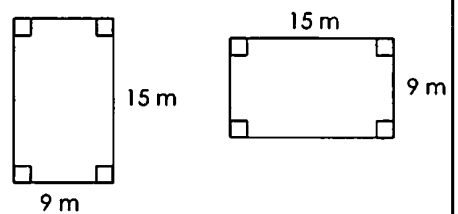
Determine whether the polygons are congruent.

3.



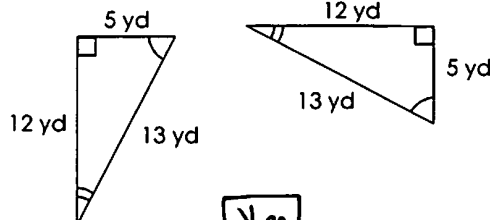
No

4.



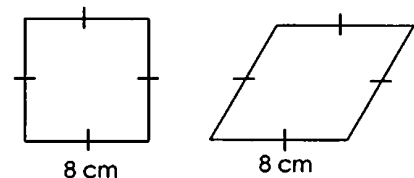
Yes

5.



Yes

6.



No

REGULAR Polygons

- A **regular polygon** is a polygon in which all Sides are congruent and all interior Angles are congruent.

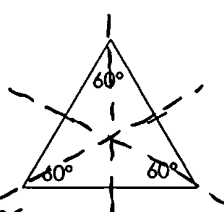


- A **line of symmetry** divides a polygon into two congruent parts.

- The **number of lines of symmetry** in a regular polygon is equal to the number of sides.

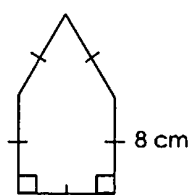
Determine if the figure is a regular polygon. If yes, show the lines of symmetry.

7.



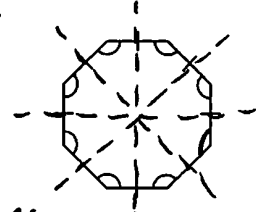
Yes

8.



No

9.



Yes

Name: _____

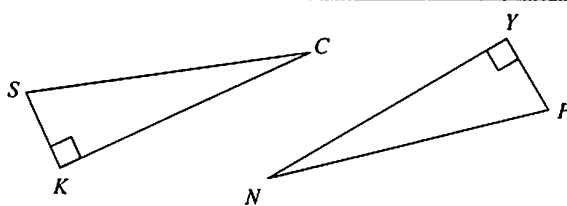
Unit 7: Measurement and Geometry

Date: _____ Per: _____

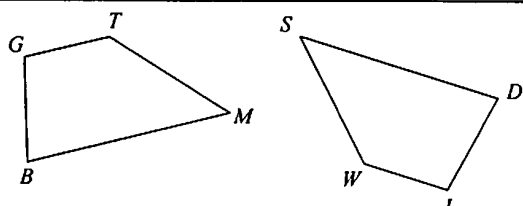
Homework 1: Polygons & Congruency

Directions: If the figures below are congruent, list all pairs of congruent sides and angles.

1.



2.



Sides

Angles

Sides

Angles

$$\begin{aligned}\overline{SK} &\cong \overline{YN} \\ \overline{KC} &\cong \overline{PN} \\ \overline{SC} &\cong \overline{PN}\end{aligned}$$

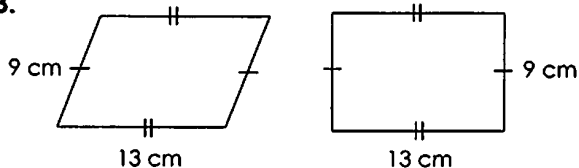
$$\begin{aligned}\angle S &\cong \angle P \\ \angle C &\cong \angle N \\ \angle K &\cong \angle Y\end{aligned}$$

$$\begin{aligned}\overline{GT} &\cong \overline{LW} \\ \overline{TM} &\cong \overline{WS} \\ \overline{MB} &\cong \overline{SD} \\ \overline{GB} &\cong \overline{DL}\end{aligned}$$

$$\begin{aligned}\angle G &\cong \angle L \\ \angle B &\cong \angle D \\ \angle T &\cong \angle W \\ \angle M &\cong \angle S\end{aligned}$$

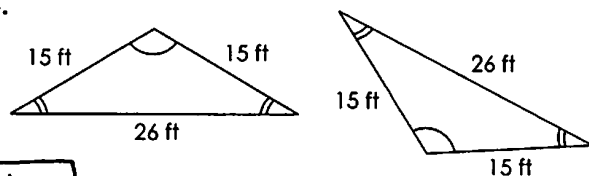
Directions: Determine whether the figures below are congruent.

3.



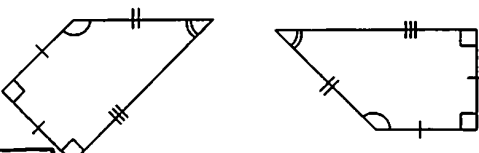
No

4.



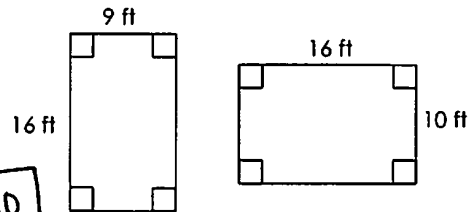
Yes

5.



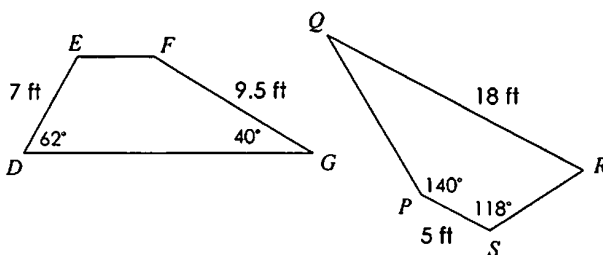
Yes

6.

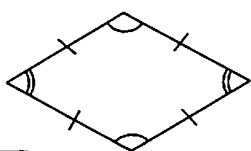


No

The figures below are congruent. Use the figures to answer questions 7-11.

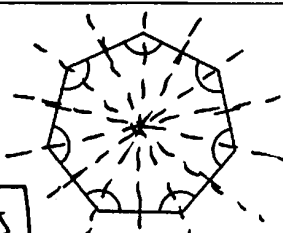
7. Which side corresponds to \overline{DE} ? RS8. What is the length of \overline{PQ} ? 9.5 ft9. What is the length of \overline{DG} ? 18 ft10. What is measure of $\angle R$? 62°11. What is measure of $\angle E$? 118°**Directions:** Determine if the figure is a regular polygon. If yes, draw the lines of symmetry.

12.



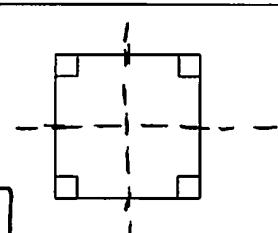
No

13.



Yes

14.



Yes

Name:

Date:

Topic:

Class:

Main Ideas/Questions

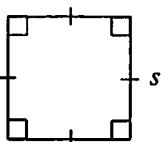
Notes/Examples

PERIMETER

of Squares & Rectangles

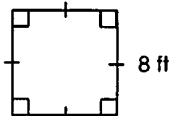
What is perimeter? Perimeter is the sum of the side measures around a 2-dimensional figure.

Perimeter of a Square



$$P = 4 \cdot s$$

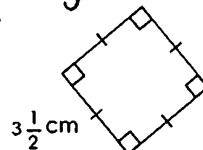
1.



$$P = 4(8)$$

$$P = 32 \text{ ft}$$

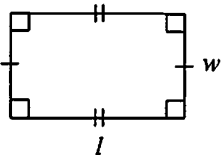
2.



$$P = 4(3\frac{1}{2})$$

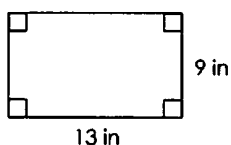
$$P = 14 \text{ cm}$$

Perimeter of a Rectangle



$$P = 2 \cdot l + 2 \cdot w$$

3.

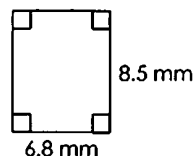


$$P = 2(13) + 2(9)$$

$$= 26 + 18$$

$$= 44 \text{ in}$$

4.



$$P = 2(6.8) + 2(8.5)$$

$$= 13.6 + 17$$

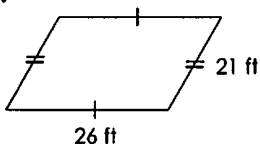
$$= 30.6 \text{ mm}$$

Find the perimeter of each figure below.

PERIMETER

of other Figures

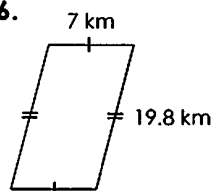
5.



$$P = 2(26) + 2(21)$$

$$= 52 + 42 = 94 \text{ ft}$$

6.

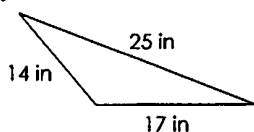


$$P = 2(7) + 2(19.8)$$

$$= 14 + 39.6$$

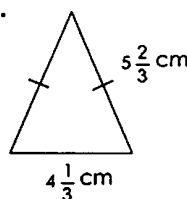
$$= 53.6 \text{ km}$$

7.



$$P = 14 + 17 + 25 = 56 \text{ in}$$

8.

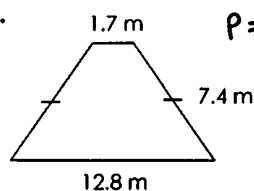


$$P = 4\frac{1}{3} + 2(5\frac{2}{3})$$

$$= \frac{13}{3} + \frac{34}{3}$$

$$= \frac{47}{3} = 15\frac{2}{3} \text{ cm}$$

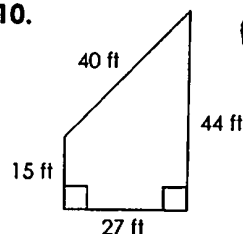
9.



$$P = 1.7 + 12.8 + 2(7.4)$$

$$= 29.3 \text{ m}$$

10.



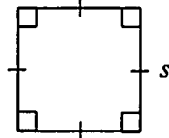
$$P = 40 + 44 + 15 + 27$$

$$= 126 \text{ ft}$$

AREA of Rectangles & Squares

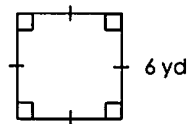
What is area? Area is the amount of space occupied by a 2-dimensional figure.

Area of a Square



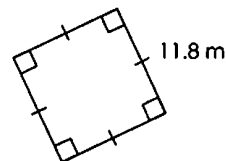
$$A = s^2$$

11.



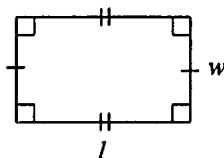
$$A = 6^2 = 36 \text{ yd}^2$$

12.



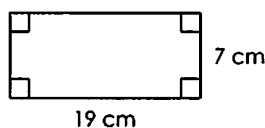
$$A = 11.8^2 = 139.24 \text{ m}^2$$

Area of a Rectangle



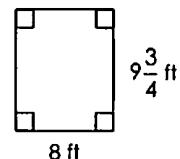
$$A = l \cdot w$$

13.



$$A = 19(7) = 133 \text{ cm}^2$$

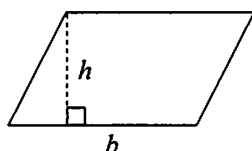
14.



$$A = 9\frac{3}{4}(8) = \frac{39}{4}(8) = 78 \text{ ft}^2$$

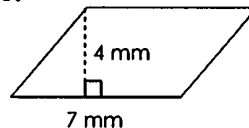
AREA of a Parallelogram

Area of a Parallelogram



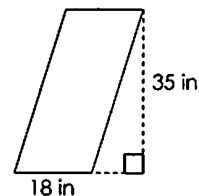
$$A = b \cdot h$$

15.



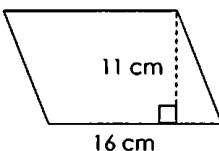
$$A = 7(4) = 28 \text{ mm}^2$$

16.



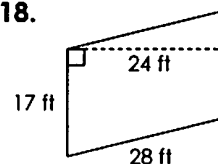
$$A = 18(35) = 630 \text{ in}^2$$

17.



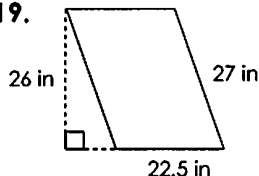
$$A = 16(11) = 176 \text{ cm}^2$$

18.



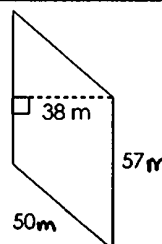
$$A = 17(24) = 408 \text{ ft}^2$$

19.



$$A = 22.5(26) = 585 \text{ in}^2$$

20.



$$A = 50(38) = 1900 \text{ m}^2$$

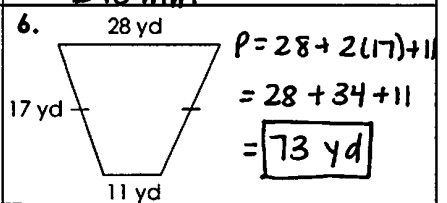
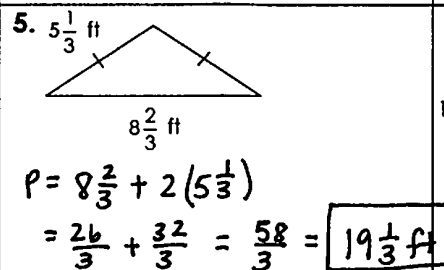
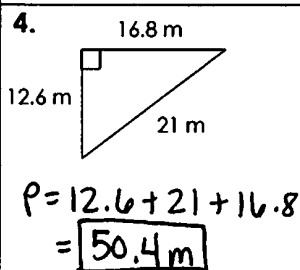
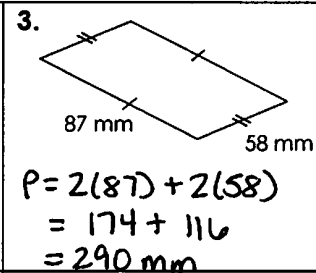
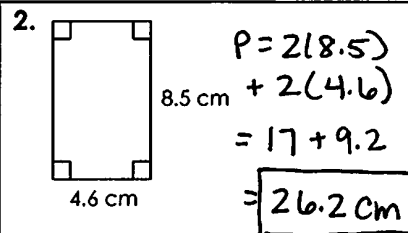
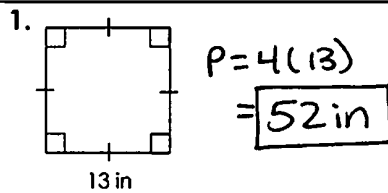
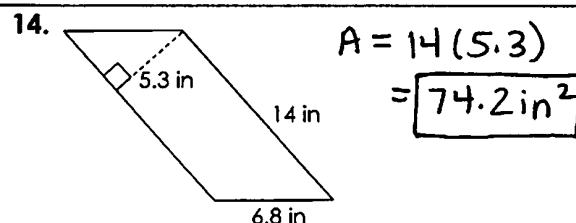
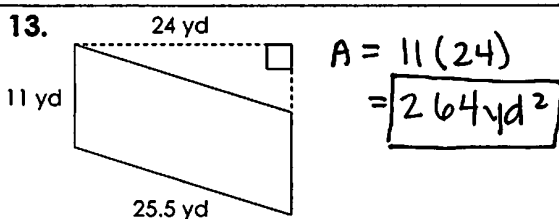
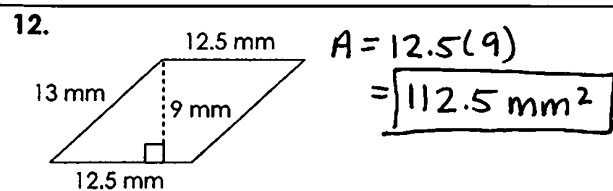
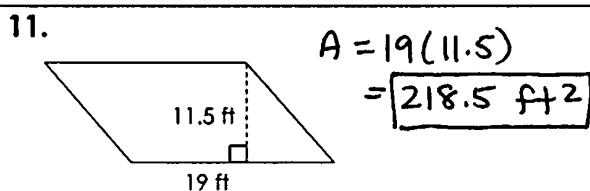
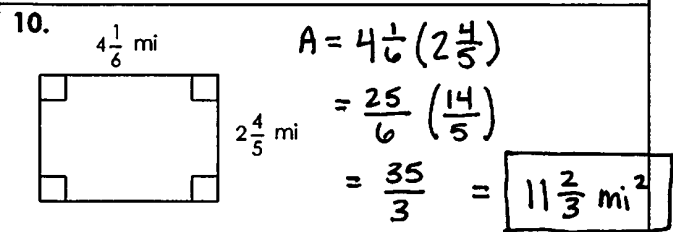
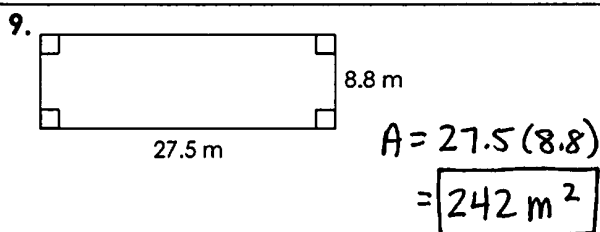
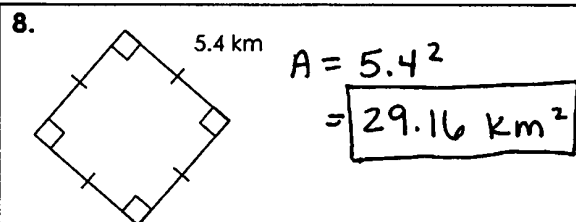
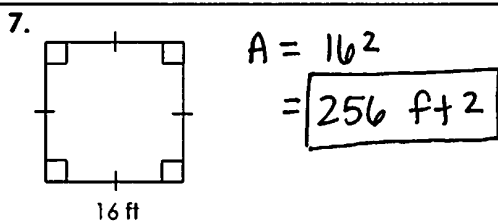
Name: _____

Unit 7: Measurement and Geometry



Date: _____ Per: _____

Homework 2: Perimeter; Area of Rectangles & Parallelograms

Directions: Find the perimeter of each figure.**Directions:** Find the area of each figure.

Name:

Date:

Topic:

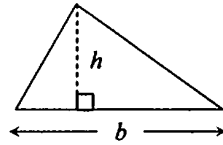
Class:

Main Ideas/Questions

Notes/Examples

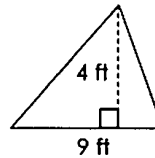
AREA of a Triangle

Area of a Triangle



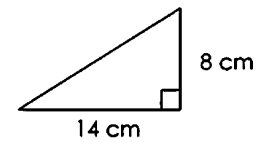
$$A = \frac{1}{2}bh$$

1.



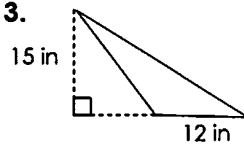
$$A = \frac{1}{2}(9)(4) \\ = \frac{1}{2}(36) = \boxed{18 \text{ ft}^2}$$

2.



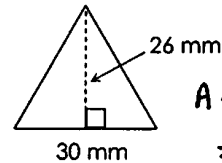
$$A = \frac{1}{2}(14)(8) \\ = \frac{1}{2}(112) \\ = \boxed{56 \text{ cm}^2}$$

3.



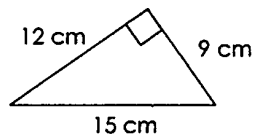
$$A = \frac{1}{2}(12)(15) \\ = \frac{1}{2}(180) = \boxed{90 \text{ in}^2}$$

4.



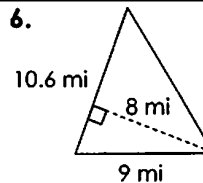
$$A = \frac{1}{2}(30)(26) \\ = \frac{1}{2}(780) \\ = \boxed{390 \text{ mm}^2}$$

5.



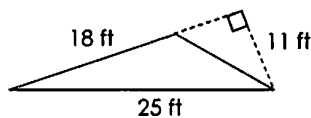
$$A = \frac{1}{2}(9)(12) \\ = \frac{1}{2}(108) = \boxed{54 \text{ cm}^2}$$

6.



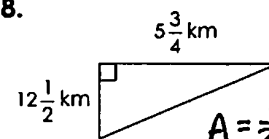
$$A = \frac{1}{2}(10.6)(8) \\ = \frac{1}{2}(84.8) \\ = \boxed{42.4 \text{ mi}^2}$$

7.



$$A = \frac{1}{2}(18)(11) \\ = \frac{1}{2}(198) = \boxed{99 \text{ ft}^2}$$

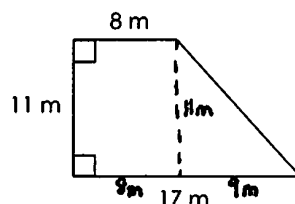
8.



$$A = \frac{1}{2}\left(\frac{25}{2}\right)\left(\frac{23}{4}\right) \\ A = \frac{1}{2}\left(\frac{575}{8}\right) \\ = \frac{575}{16} = \boxed{35 \frac{15}{16} \text{ km}^2}$$

AREA of a Trapezoid (by decomposing)

The area of a trapezoid can be found by decomposing (breaking apart) the trapezoid into triangles and rectangles. Find the area of the trapezoid below by finding the sum of the individual areas.



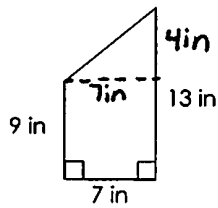
$$\text{Rectangle: } A = 11(8) = 88 \text{ m}^2$$

$$\text{Triangle: } A = \frac{1}{2}(9)(11) = 49.5 \text{ m}^2$$

$$88 + 49.5 = \boxed{137.5 \text{ m}^2}$$

Use decomposition to find the area of each trapezoid.

9.

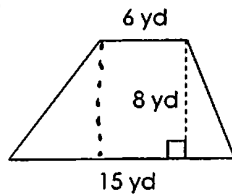


$$R: A = 9(7) = 63 \text{ in}^2$$

$$T: A = \frac{1}{2}(4)(7) = 14 \text{ in}^2$$

$$63 + 14 = \boxed{77 \text{ in}^2}$$

10.

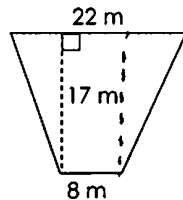


$$R: A = 6(8) = 48 \text{ yd}^2$$

$$T: A = \frac{1}{2}(9)(8) = 36 \text{ yd}^2$$

$$48 + 36 = \boxed{84 \text{ yd}^2}$$

11.



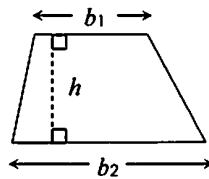
$$R: A = 17(8) = 136 \text{ m}^2$$

$$T: A = \frac{1}{2}(14)(17) = 119 \text{ m}^2$$

$$136 + 119 = \boxed{255 \text{ m}^2}$$

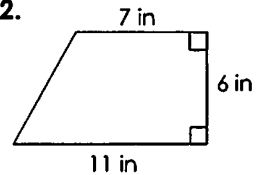
AREA
of a Trapezoid
(using a formula)

Area of a Trapezoid



$$A = \frac{1}{2} \cdot h \cdot (b_1 + b_2)$$

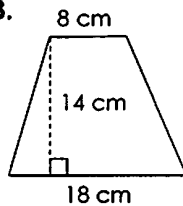
12.



$$A = \frac{1}{2}(6)(7 + 11)$$

$$A = 3(18) = \boxed{54 \text{ in}^2}$$

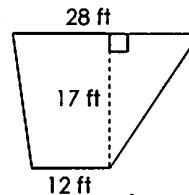
13.



$$A = \frac{1}{2}(14)(8 + 18)$$

$$= 7(26) = \boxed{182 \text{ cm}^2}$$

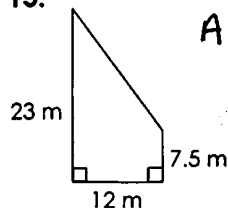
14.



$$A = \frac{1}{2}(17)(28 + 12)$$

$$= 8.5(40) = \boxed{340 \text{ ft}^2}$$

15.

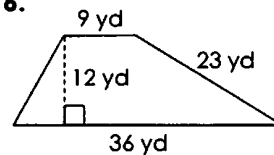


$$A = \frac{1}{2}(12)(23 + 7.5)$$

$$= 6(30.5)$$

$$= \boxed{183 \text{ m}^2}$$

16.

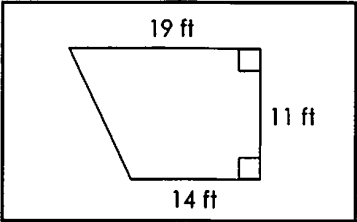
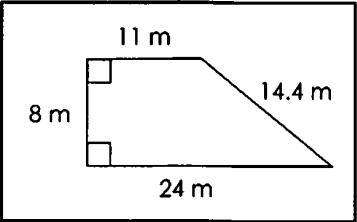
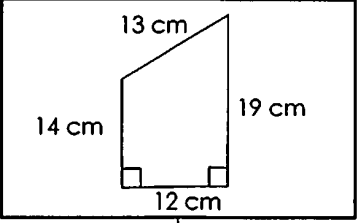
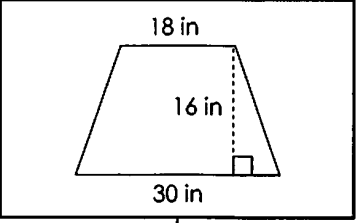
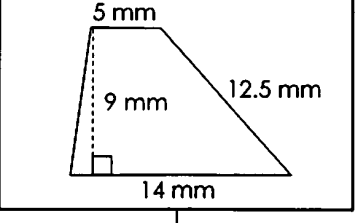


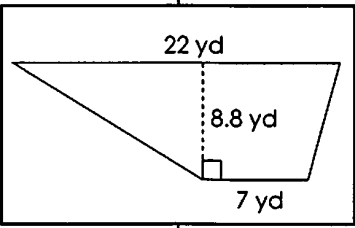
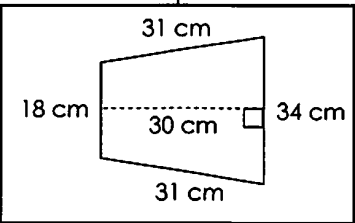
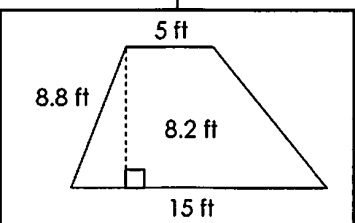
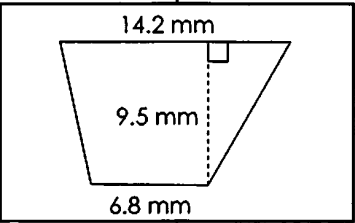
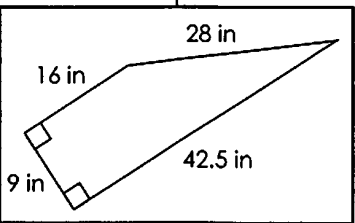
$$A = \frac{1}{2}(12)(9 + 36)$$

$$= 6(45) = \boxed{270 \text{ yd}^2}$$

AREA of a TRAPEZOID

Directions: Find the area of the trapezoid in the middle using decomposition and the area of a trapezoid formula. If done correctly, your answers should be the same!

Decomposition	Area of a Trapezoid Formula
<p>1</p> <p>R: $A = 14(11)$ $= 154 \text{ ft}^2$</p> <p>T: $A = \frac{1}{2}(5)(11)$ $= 27.5 \text{ ft}^2$</p> <p><u>Area = 181.5 ft²</u></p>	 <p>$A = \frac{1}{2}(11)(19+14)$ $= 5.5(33)$ <u>$= 181.5 \text{ ft}^2$</u></p>
<p>2</p> <p>R: $A = 11(8)$ $= 88 \text{ m}^2$</p> <p>T: $A = \frac{1}{2}(13)(8)$ $= 52 \text{ m}^2$</p> <p><u>Area = 140 m²</u></p>	 <p>$A = \frac{1}{2}(8)(11+24)$ $= 4(35)$ <u>$= 140 \text{ m}^2$</u></p>
<p>3</p> <p>R: $A = 12(14)$ $= 168 \text{ cm}^2$</p> <p>T: $A = \frac{1}{2}(5)(12)$ $= 30 \text{ cm}^2$</p> <p><u>Area = 198 cm²</u></p>	 <p>$A = \frac{1}{2}(12)(14+19)$ $= 6(33)$ <u>$= 198 \text{ cm}^2$</u></p>
<p>4</p> <p>R: $A = 18(16)$ $= 288 \text{ in}^2$</p> <p>T: $A = \frac{1}{2}(12)(16)$ $= 96 \text{ in}^2$</p> <p><u>Area = 384 in²</u></p>	 <p>$A = \frac{1}{2}(16)(18+30)$ $= 8(48)$ <u>$= 384 \text{ in}^2$</u></p>
<p>5</p> <p>R: $A = 5(9) = 45 \text{ mm}^2$</p> <p>T: $A = \frac{1}{2}(9)(9)$ $= 40.5 \text{ mm}^2$</p> <p><u>Area = 85.5 mm²</u></p>	 <p>$A = \frac{1}{2}(9)(5+14)$ $= 4.5(19)$ <u>$= 85.5 \text{ mm}^2$</u></p>

Decomposition	Area of a Trapezoid Formula
<p>6</p> <p>R: $A = 7(8.8)$ $= 61.6 \text{ yd}^2$</p> <p>T: $A = \frac{1}{2}(15)(8.8)$ $= 66 \text{ yd}^2$</p> <p>Area = 127.6 yd²</p>	<p>$A = \frac{1}{2}(8.8)(22+7)$ $= 4.4(29)$ $= 127.6 \text{ yd}^2$</p> 
<p>7</p> <p>R: $A = 18(30)$ $= 540 \text{ cm}^2$</p> <p>T: $A = \frac{1}{2}(16)(30)$ $= 240 \text{ cm}^2$</p> <p>Area = 780 cm²</p>	<p>$A = \frac{1}{2}(30)(18+34)$ $= 15(52)$ $= 780 \text{ cm}^2$</p> 
<p>8</p> <p>R: $A = 5(8.2)$ $= 41 \text{ ft}^2$</p> <p>T: $A = \frac{1}{2}(10)(8.2)$ $= 41 \text{ ft}^2$</p> <p>Area = 82 ft²</p>	<p>$A = \frac{1}{2}(8.2)(5+15)$ $= 4.1(20)$ $= 82 \text{ ft}^2$</p> 
<p>9</p> <p>R: $A = 6.8(9.5)$ $= 64.6 \text{ mm}^2$</p> <p>T: $A = \frac{1}{2}(7.4)(9.5)$ $= 35.15 \text{ mm}^2$</p> <p>Area = 99.75 mm²</p>	<p>$A = \frac{1}{2}(9.5)(14.2+6.8)$ $= 4.75(21)$ $= 99.75 \text{ mm}^2$</p> 
<p>10</p> <p>R: $A = 16(9)$ $= 144 \text{ in}^2$</p> <p>T: $A = \frac{1}{2}(26.5)(9)$ $= 119.25 \text{ in}^2$</p> <p>Area = 263.25 in²</p>	<p>$A = \frac{1}{2}(9)(16+42.5)$ $= 4.5(58.5)$ $= 263.25 \text{ in}^2$</p> 

Name: _____

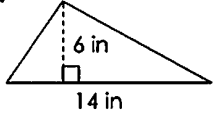
Unit 7: Measurement and Geometry

Date: _____ Per: _____

Homework 3: Area of Triangles & Trapezoids

Directions: Find the area of each triangle.

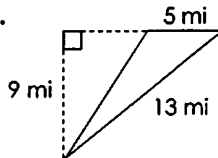
1.



$$A = \frac{1}{2}(14)(6)$$

$$= \boxed{42 \text{ in}^2}$$

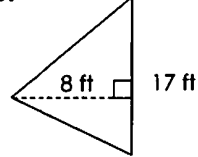
2.



$$A = \frac{1}{2}(5)(9)$$

$$= \boxed{22.5 \text{ mi}^2}$$

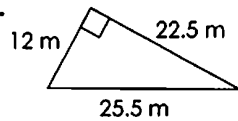
3.



$$A = \frac{1}{2}(17)(8)$$

$$= \boxed{68 \text{ ft}^2}$$

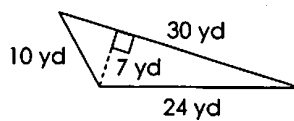
4.



$$A = \frac{1}{2}(12)(22.5)$$

$$= \boxed{135 \text{ m}^2}$$

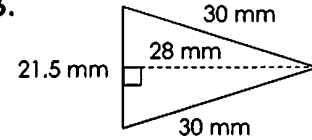
5.



$$A = \frac{1}{2}(30)(7)$$

$$= \boxed{105 \text{ yd}^2}$$

6.

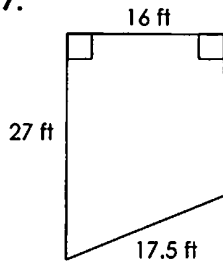


$$A = \frac{1}{2}(21.5)(28)$$

$$= \boxed{301 \text{ mm}^2}$$

Directions: Use decomposition to find the area of each trapezoid.

7.



$$R: A = 20(16)$$

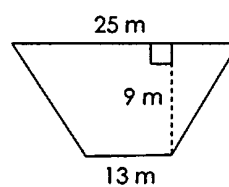
$$= 320 \text{ ft}^2$$

$$T: A = \frac{1}{2}(7)(16)$$

$$= 56 \text{ ft}^2$$

$$\text{Area} = \boxed{376 \text{ ft}^2}$$

8.



$$R: A = 13(9)$$

$$= 117 \text{ m}^2$$

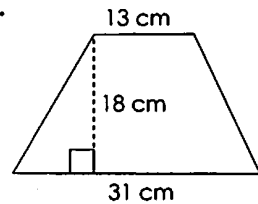
$$T: A = \frac{1}{2}(12)(9)$$

$$= 54 \text{ m}^2$$

$$\text{Area} = \boxed{171 \text{ m}^2}$$

Directions: Use a formula to find the area of each trapezoid.

9.

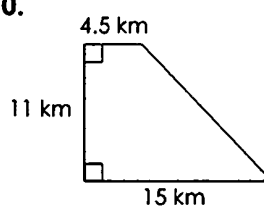


$$A = \frac{1}{2}(18)(13+31)$$

$$= 9(44)$$

$$= \boxed{396 \text{ cm}^2}$$

10.

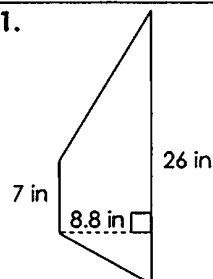


$$A = \frac{1}{2}(11)(4.5+15)$$

$$= 5.5(19.5)$$

$$= \boxed{107.25 \text{ km}^2}$$

11.

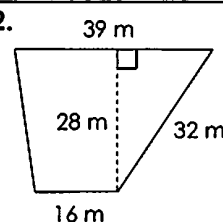


$$A = \frac{1}{2}(8.8)(7+26)$$

$$= 4.4(33)$$

$$= \boxed{145.2 \text{ in}^2}$$

12.



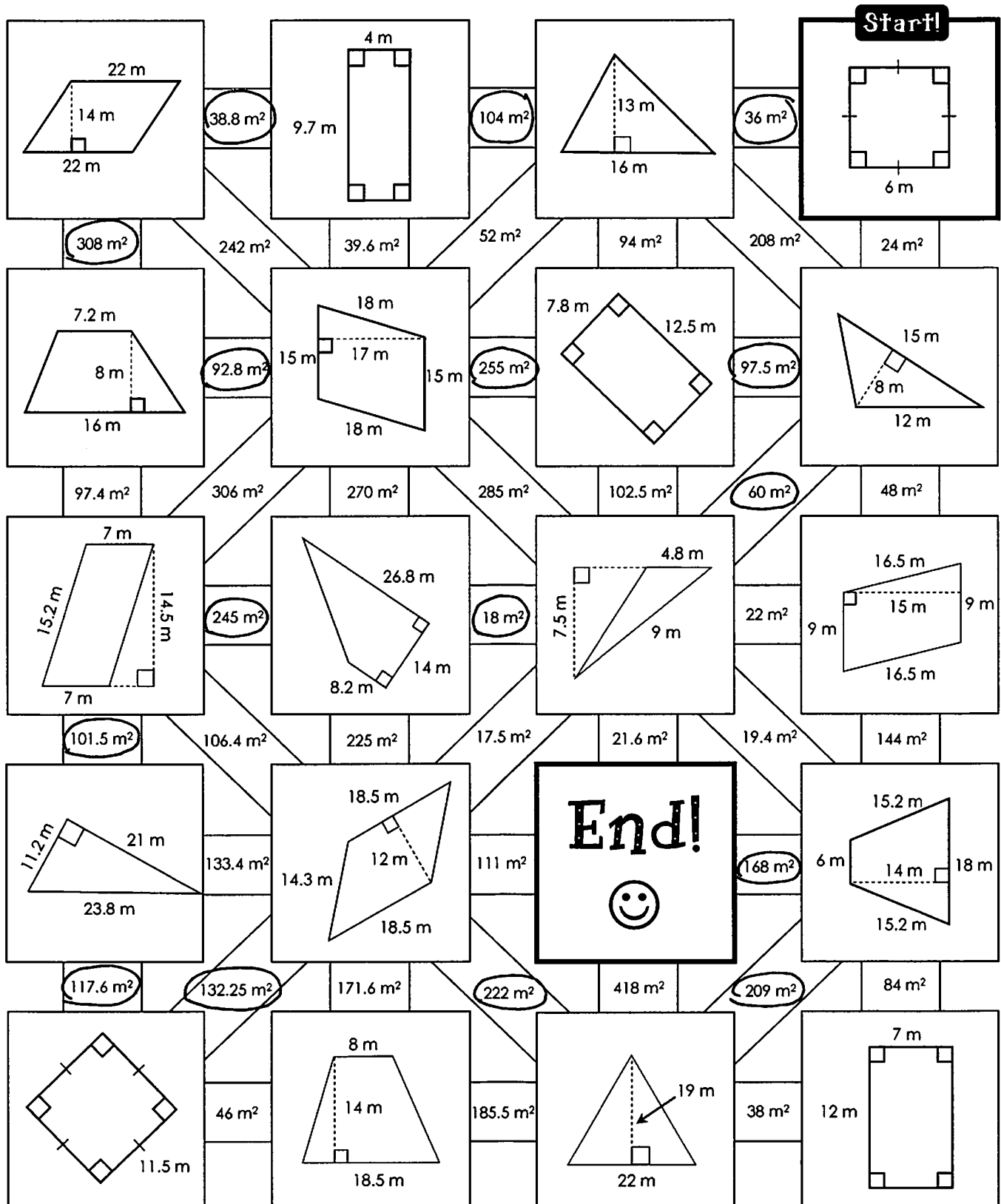
$$A = \frac{1}{2}(28)(39+16)$$

$$= 14(55)$$

$$= \boxed{770 \text{ m}^2}$$

Area of Plane Figures Maze!

Directions: Find the area of each figure Use your solutions to navigate through the maze.
SHOW ALL WORK on a separate sheet of paper and attach it to this page!



Name:

Date:

Topic:

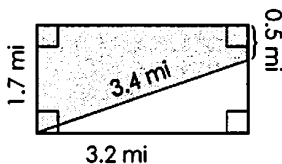
Class:

Main Ideas/Questions

Notes/Examples

PERIMETER

Applications



1. A triangular garden has sides measuring 14 feet, 17 feet, and 28 feet. If Cody is laying a brick border around the garden, how many feet of brick will he lay?

$$P = 14 + 17 + 28 = \boxed{59 \text{ ft}}$$

2. A tennis court is 78 feet long by 36 feet wide. If Sydney runs along the edge of the court twice, how far will she run?

$$P = 2(78) + 2(36) = 228$$

$$2(228) = \boxed{456 \text{ ft}}$$

3. Levi walked the rectangular path to the right. If his friend Marcus walked the trapezoidal path, how much further did Levi walk than Marcus?

$$\text{Levi: } P = 2(1.7) + 2(3.2) = 9.8$$

$$\text{Marcus: } P = 1.7 + 3.2 + 0.5 + 3.4 = 8.8 \quad \boxed{1 \text{ mi}}$$

4. An iron dinner bell is in the shape of an equilateral triangle with a side length of $8\frac{5}{8}$ inches. Find the length of the rod used to create the bell.

$$P = 3(8\frac{5}{8})$$

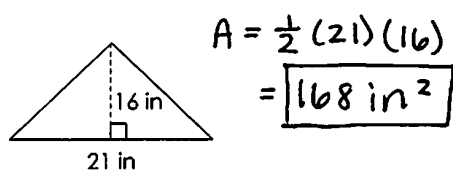
$$= 3(\frac{69}{8})$$

$$= \frac{207}{8} = \boxed{25\frac{7}{8} \text{ in}}$$

AREA

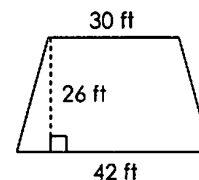
Applications

5. A corner cabinet has triangular shelves the with dimensions shown below. If the shelves are being covered with shelving paper, what is the minimum amount of paper needed for each shelf?

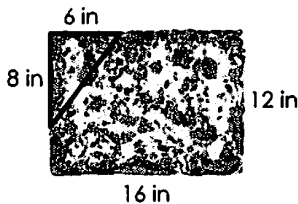


$$A = \frac{1}{2}(21)(16) = \boxed{168 \text{ in}^2}$$

6. A wooden stage is in the shape of a trapezoid with dimensions shown below. What is the area of the stage?



$$A = \frac{1}{2}(26)(30 + 42) = 13(72) = \boxed{936 \text{ ft}^2}$$



7. Sam cut a piece of pizza from the rectangular pizza to the left and ate it. What fraction of the pizza did he eat?

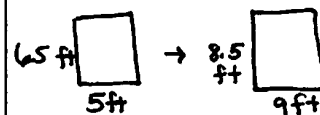
$$T: A = \frac{1}{2}(6)(8) = 24 \text{ in}^2$$

$$R: A = 12(16) = 192 \text{ in}^2$$

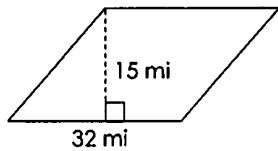
$$\frac{24}{192} = \frac{1}{8}$$

Sam ate $\frac{1}{8}^{\text{th}}$ of the pizza.

8. Mia's bed is 6.5 feet long by 5 feet wide. She would like a quilt large enough to cover the bed and hang off by 2 feet along the sides and foot of the bed. What is the minimum amount of fabric needed for the quilt?



$$A = 8.5(9) = \boxed{76.5 \text{ ft}^2}$$



9. A county is in the shape of a parallelogram with dimensions shown to the left. If 12,000 people live in the county, find the average number of people per square mile.

$$A = 32(15) = 480 \text{ mi}^2$$

$$\frac{12000}{480} = \boxed{25 \text{ people / mi}^2}$$

10. Mikayla is replacing the carpet in her rectangular living room. If her living room is 16 feet by 21 feet and the carpet costs \$3.50 per square foot, find the total cost.

$$A = 16(21) = 336 \text{ ft}^2$$

$$336(3.50) = \boxed{\$1176}$$

Finding DIMENSIONS

11. The perimeter of a rectangle is 84 inches. If the width is 13 inches, find the length of the rectangle.

$$P = 2l + 2w$$

$$84 = 2l + 2(13)$$

$$84 = 2l + 26$$

$$\begin{array}{r} -26 \quad -26 \\ \hline \end{array}$$

$$\frac{58}{2} = \frac{2l}{2}$$

$$\boxed{l = 29 \text{ in}}$$

12. Find the side length of a square with a perimeter of 188 feet.

$$P = 4s$$

$$\frac{188}{4} = \frac{4s}{4}$$

$$\boxed{47 \text{ ft} = s}$$

13. A rectangle has an area of 34.2 square meters. If the width of the rectangle is 4.5 inches, find its length.

$$A = l \cdot w$$

$$\frac{34.2}{4.5} = \frac{l(4.5)}{4.5}$$

$$\boxed{7.6 \text{ in} = l}$$

14. The area of a triangle is 52 square centimeters. If the base of the triangle is 13 centimeters, find its height.

$$A = \frac{1}{2} b \cdot h$$

$$52 = \frac{1}{2} (13)h$$

$$\frac{52}{6.5} = \frac{6.5h}{6.5}$$

$$\boxed{8 \text{ cm} = h}$$

15. Find the area of a rectangle that has a length of 16 yards and a perimeter of 54 yards.

$$P = 2l + 2w$$

$$54 = 2(16) + 2w$$

$$54 = 32 + 2w$$

$$22 = 2w \quad | \quad A = 16(11)$$

$$11 = w$$

$$= \boxed{176 \text{ yd}^2}$$

16. An equilateral triangle has an area of 97.5 square meters. If the height of the triangle is 13 meters, find the perimeter of the triangle.

$$A = \frac{1}{2} b h$$

$$97.5 = \frac{1}{2} b(13)$$

$$97.5 = 6.5b$$

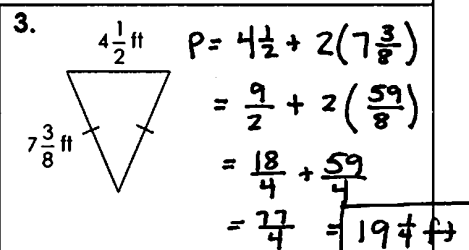
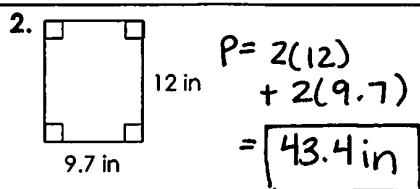
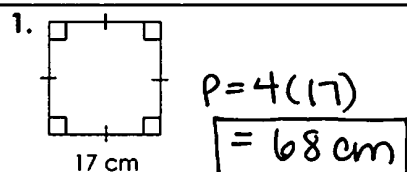
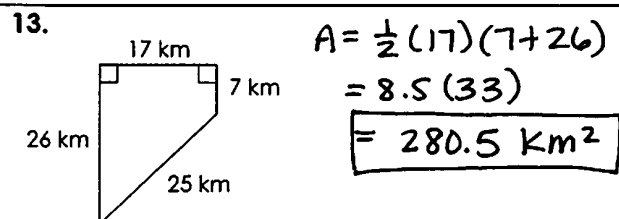
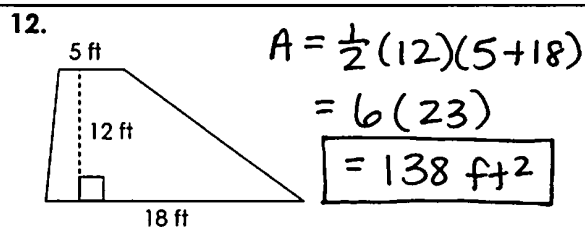
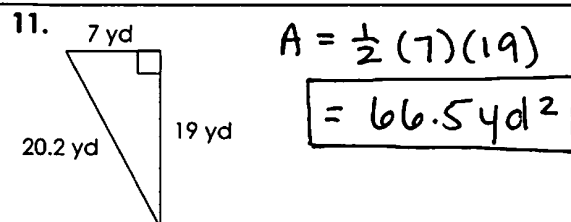
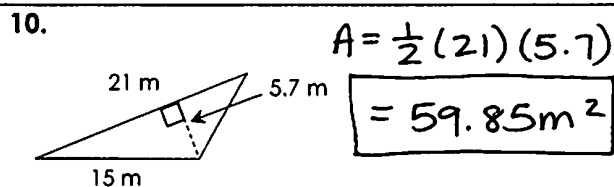
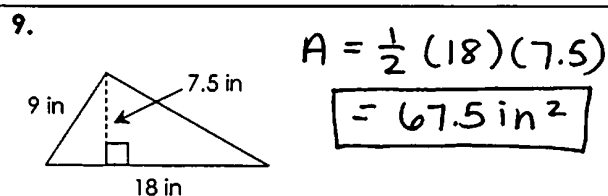
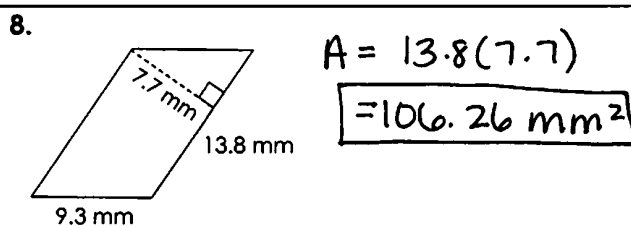
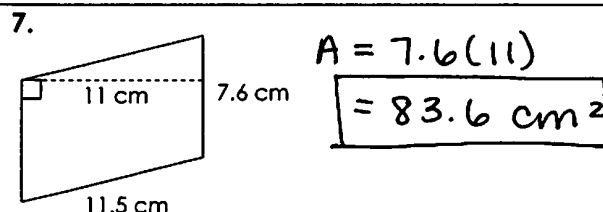
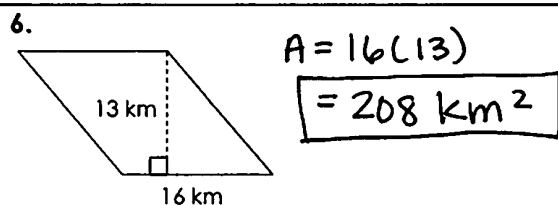
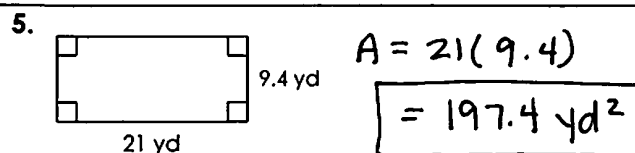
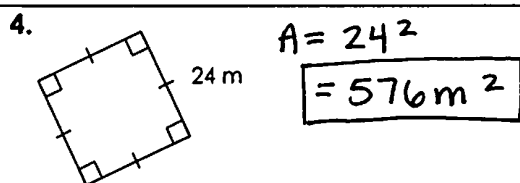
$$15 = b$$

$$P = 3(15) = \boxed{45 \text{ m}}$$

Name: _____

Unit 7: Measurement & Geometry

Date: _____ Per: _____

Homework 4: Perimeter and Area Review + Applications**** This is a 2-page document! ******Directions:** Find the perimeter each figure.**Directions:** Find the area of each figure.

14. An airplane museum roped off a triangular area to surround a new plane. If the sides of the triangular area measure 42.7 feet, 63.5 feet, and 59.7 feet, how much rope did they use?

$$P = 42.7 + 63.5 + 59.7$$

$$= 165.9 \text{ ft}$$

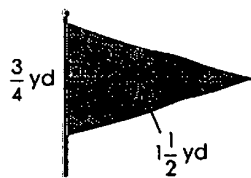
15. A farmer is putting a fence around a rectangular pasture. If the pasture measures 320 feet by 135 feet and the fencing costs \$8 per foot, how much will the fence cost?

$$P = 2(320) + 2(135)$$

$$= 910 \text{ ft}$$

$$910(8) = \$7280$$

16. Flags are being made with the dimensions shown below. What is the minimum amount of fabric needed to make each flag?

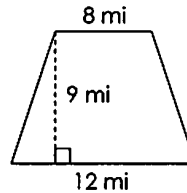


$$A = \frac{1}{2} \left(\frac{3}{4} \right) \left(1 \frac{1}{2} \right)$$

$$= \frac{3}{8} \left(\frac{3}{2} \right)$$

$$= \frac{9}{16} \text{ yd}^2$$

17. Students that attend Bayview Middle School live in the trapezoidal-shaped zone below. If the school enrolls 1,170 students, find the average number of students per square mile.



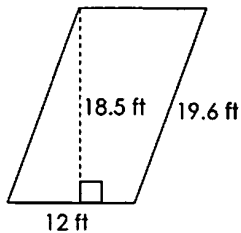
$$A = \frac{1}{2} (9)(8+12)$$

$$= 4.5(20)$$

$$= 90 \text{ mi}^2$$

$$\frac{1170}{90} = 13 \text{ students/mi}^2$$

18. The dimensions of a driveway to be paved are given below. If the paving company charges \$9.50 per square foot, how much will it cost to pave the driveway?



$$A = 12(18.5)$$

$$= 222 \text{ ft}^2$$

$$222(9.5) = \$2109$$

19. The perimeter of a rectangular pool is 110 feet. If the pool is 17 feet wide, find the length of the pool.

$$110 = 2(17) + 2l$$

$$110 = 34 + 2l$$

$$76 = 2l$$

$$38 \text{ ft} = l$$

20. Find the height of a triangle with an area of 156 square kilometers and a base that measures 24 kilometers.

$$156 = \frac{1}{2} (24)h$$

$$156 = 12h$$

$$13 \text{ km} = h$$

21. A rectangle has an area of 93 square inches and a length of 15 inches. Find its perimeter.

$$93 = 15w$$

$$6.2 = w$$

$$P = 2(15) + 2(6.2)$$

$$= 42.4 \text{ in}$$

Name: _____

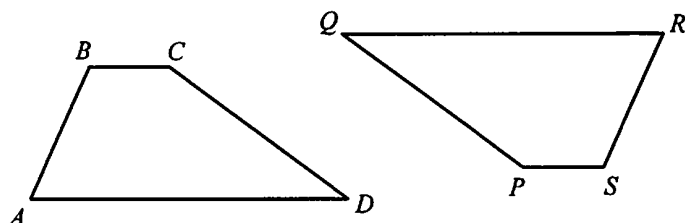
Math 6

Date: _____ Per: _____

Unit 7: Measurement & Geometry

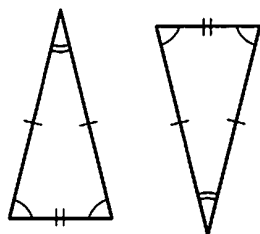
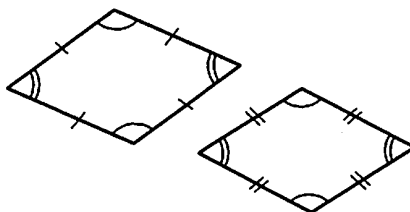
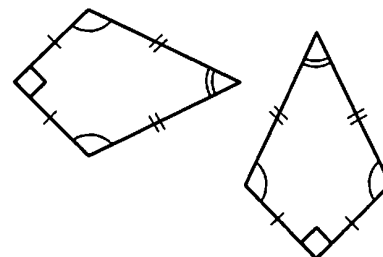
Quiz 7-1: Congruency; Perimeter & Area of Polygons

1. If the figures below are congruent, list all pairs of congruent sides and angles.

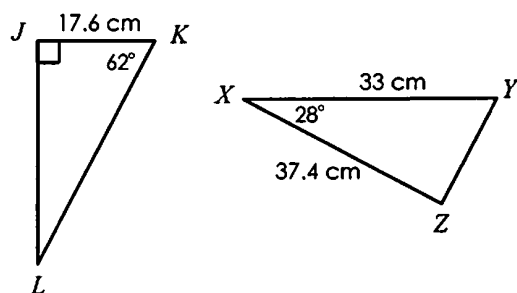


Sides	Angles
$\overline{AB} \cong \overline{RS}$	$\angle A \cong \angle R$
$\overline{BC} \cong \overline{SP}$	$\angle B \cong \angle S$
$\overline{CD} \cong \overline{PQ}$	$\angle C \cong \angle P$
$\overline{DA} \cong \overline{QR}$	$\angle D \cong \angle Q$

Determine whether the pair of polygons are congruent. (Answer yes or no.)

2. Yes3. No4. Yes

The figures below are congruent. Use the figures to answer questions 5-8.

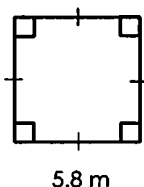
5. Which side corresponds to \overline{JK} ? \overline{ZY} 6. What is the length of \overline{JL} ?37.4 cm7. What angle corresponds to $\angle Z$? $\angle J$ 8. What is the measure of $\angle Y$? 62°

Find the perimeter and area of each figure.

9. $P = \underline{23.2 \text{ m}}$ $A = \underline{33.64 \text{ m}^2}$

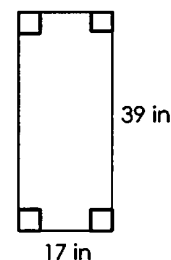
$$P = 4(5.8) = 23.2$$

$$A = 5.8^2 = 33.64$$

10. $P = \underline{112 \text{ yd}}$ $A = \underline{663 \text{ yd}^2}$

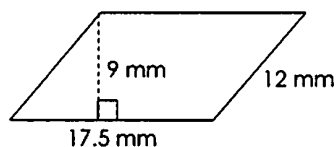
$$P = 2(17) + 2(39) = 112$$

$$A = 17(39) = 663$$



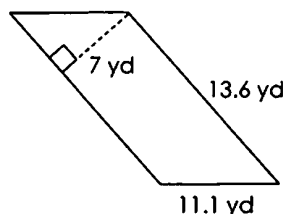
Find the area of each figure.

11. $A = \underline{157.5 \text{ mm}^2}$



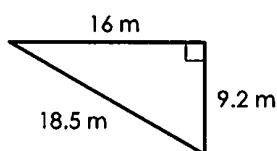
$$A = 17.5(9) \\ = 157.5$$

12. $A = \underline{95.2 \text{ yd}^2}$



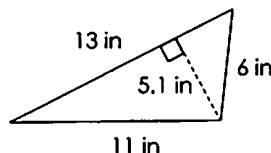
$$A = 11.1(7) \\ = 95.2$$

13. $A = \underline{73.6 \text{ m}^2}$



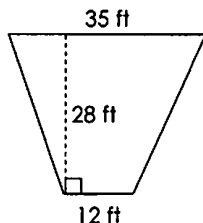
$$A = \frac{1}{2}(18.5)(9.2) \\ = 73.6$$

14. $A = \underline{33.15 \text{ in}^2}$



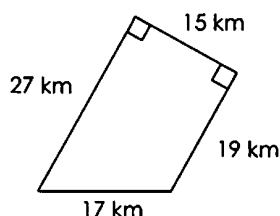
$$A = \frac{1}{2}(11)(6) \\ = 33.15$$

15. $A = \underline{658 \text{ ft}^2}$



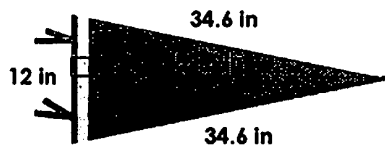
$$A = \frac{1}{2}(28)(35 + 12) \\ = 14(47) \\ = 658$$

16. $A = \underline{345 \text{ km}^2}$



$$A = \frac{1}{2}(27)(15 + 17) \\ = 7.5(32) \\ = 345$$

17. What is the minimum amount of fabric needed to create the pennant below?



$$A = \frac{1}{2}(12)(34.6) \\ = 195$$

17. $\underline{195 \text{ in}^2}$

18. $\underline{532 \text{ m}^2}$

18. The perimeter of a rectangle is 104 meters. If the length of the rectangle is 38 inches, find the area of the rectangle.

$$104 = 2(38) + 2\ell$$

$$104 = 76 + 2\ell$$

$$28 = 2\ell$$

$$14 = \ell$$

$$A = 14(38)$$

$$= 532$$

Name:

Date:

Topic:

Class:

Main Ideas/Questions

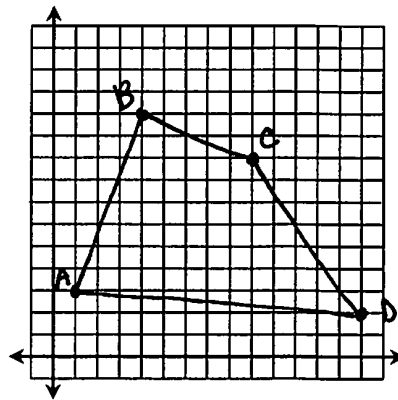
Notes/Examples

POLYGONS IN THE *Coordinate Plane*

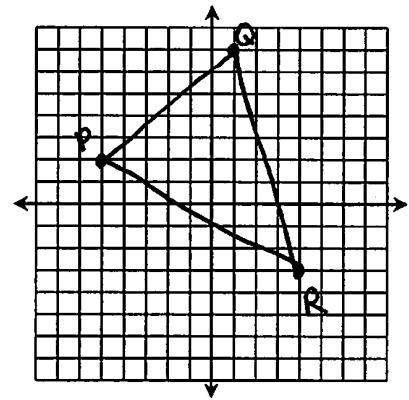
Ordered pairs can be used to represent vertices of polygons. To draw a polygon in a coordinate plane, plot and connect the ordered pairs.

Graph and label each polygon with the given vertices.

1. $A(1, 3)$, $B(4, 11)$, $C(9, 9)$, $D(14, 2)$



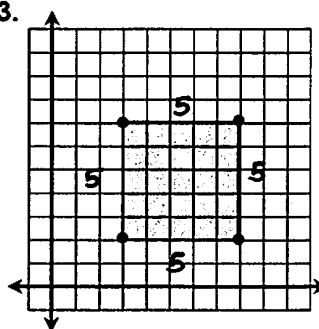
2. $P(-5, 2)$, $Q(1, 7)$, $R(4, -3)$



Finding **PERIMETER**

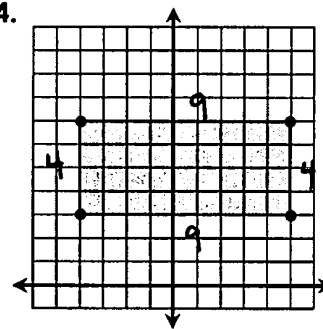
Find the perimeter of each polygon.

3.



$$P = 20$$

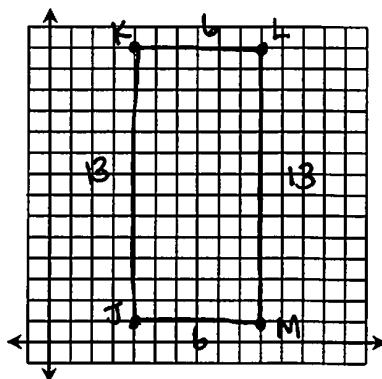
4.



$$P = 26$$

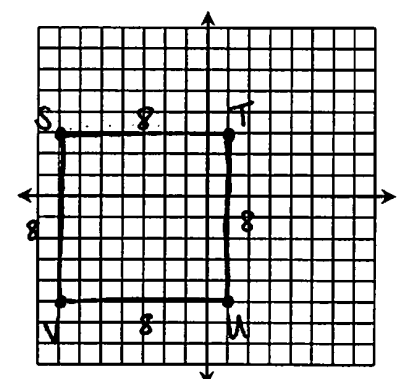
Find the perimeter of the polygon with the given vertices.

5. $J(4, 1)$, $K(4, 14)$, $L(10, 14)$, $M(10, 1)$



$$P = 38$$

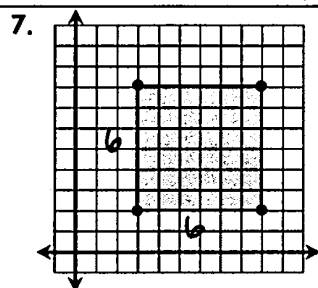
6. $S(-7, 3)$, $T(1, 3)$, $U(1, -5)$, $V(-7, -5)$



$$P = 32$$

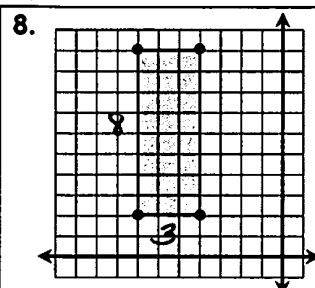
Finding AREA

Find the area of each polygon.



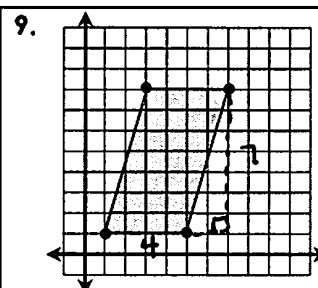
$$A = 6(6)$$

$$= 36$$



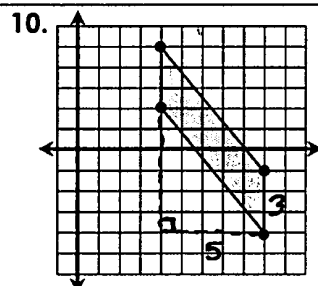
$$A = 3(8)$$

$$= 24$$



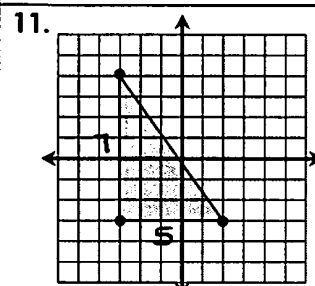
$$A = 4(7)$$

$$= 28$$



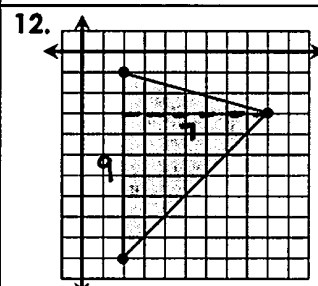
$$A = \frac{1}{2}(5)(3)$$

$$= 15$$



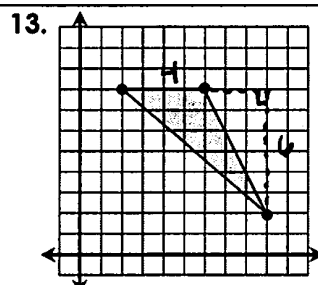
$$A = \frac{1}{2}(5)(7)$$

$$= 17.5$$



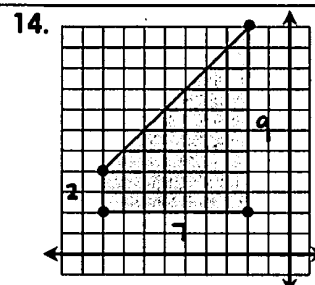
$$A = \frac{1}{2}(9)(7)$$

$$= 31.5$$



$$A = \frac{1}{2}(4)(6)$$

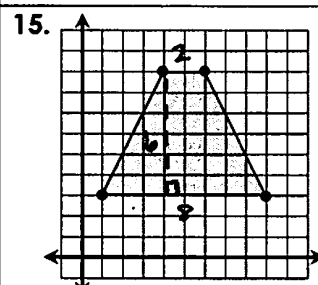
$$= 12$$



$$A = \frac{1}{2}(7)(2+9)$$

$$= 3.5(11)$$

$$= 38.5$$



$$A = \frac{1}{2}(6)(2+8)$$

$$= 3(10)$$

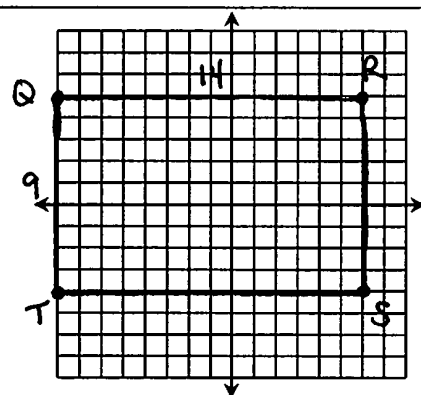
$$= 30$$

Find the area of the polygon with the given vertices.

16. $Q(-8, 5)$, $R(6, 5)$, $S(6, -4)$, $T(-8, -4)$

$$A = 14(9)$$

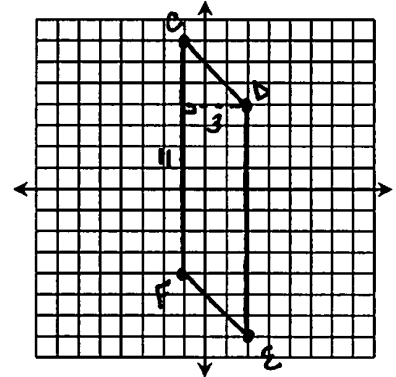
$$= 126$$



17. $C(-1, 7)$, $D(2, 4)$, $E(2, -7)$, $F(-1, -4)$

$$A = 11(3)$$

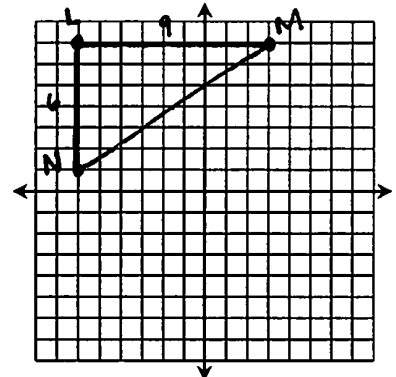
$$= 33$$



18. $L(-6, 7)$, $M(3, 7)$, $N(-6, 1)$

$$A = \frac{1}{2}(6)(9)$$

$$= 27$$

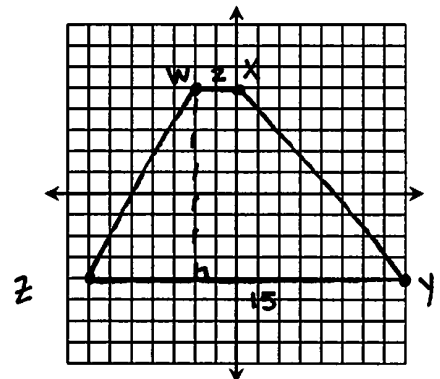


19. $W(-2, 5)$, $X(0, 5)$, $Y(8, -4)$, $Z(-7, -4)$

$$A = \frac{1}{2}(9)(2+15)$$

$$= 4.5(17)$$

$$= 76.5$$



APPLICATION

20. Erik is creating a triangular-shaped garden around a tree. He placed three stakes in the ground to outline the shape of the garden. In relation to the location of the tree, Stake A is 1 foot west and 6 feet north, Stake B is 7 feet east and 5 feet south, and Stake C is 6 feet west and 5 feet south. Placing the tree at the origin, graph the garden and find its area.

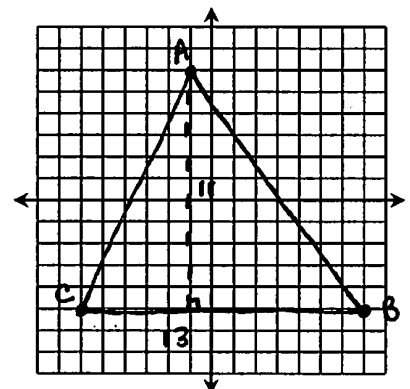
$$A(-1, 6)$$

$$B(7, -5)$$

$$C(-6, -5)$$

$$A = \frac{1}{2}(13)(11)$$

$$= 71.5 \text{ ft}^2$$



Name: _____

Unit 7: Measurement & Geometry

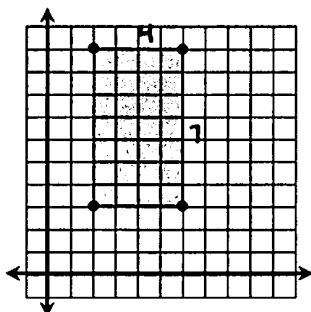
Date: _____ Per: _____

Homework 5: Polygons in the Coordinate Plane

**** This is a 2-page document! ****

Directions: Find the **perimeter and area** of each polygon.

1.



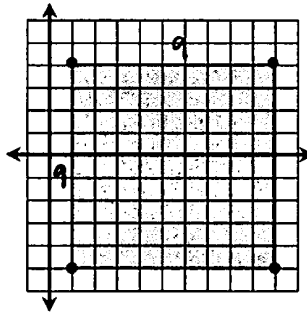
$$P = 2(4) + 2(7)$$

$$P = 22$$

$$A = 4(7)$$

$$A = 28$$

2.



$$P = 4(9)$$

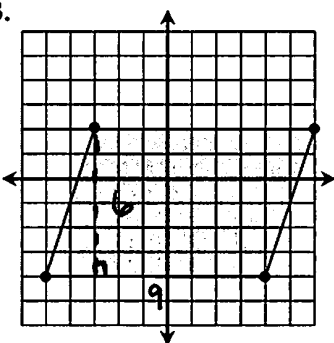
$$P = 36$$

$$A = 9^2$$

$$A = 81$$

Directions: Find the **area** of each polygon.

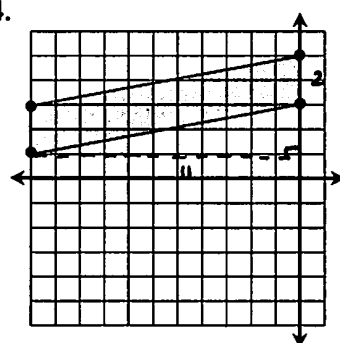
3.



$$A = 9(6)$$

$$= 54$$

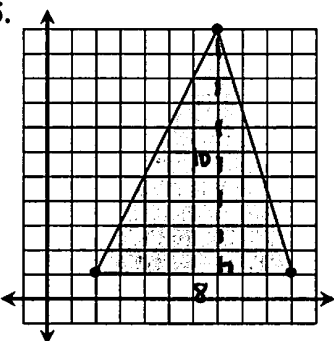
4.



$$A = 11(2)$$

$$= 22$$

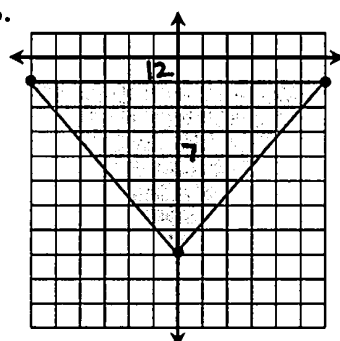
5.



$$A = \frac{1}{2}(8)(10)$$

$$= 40$$

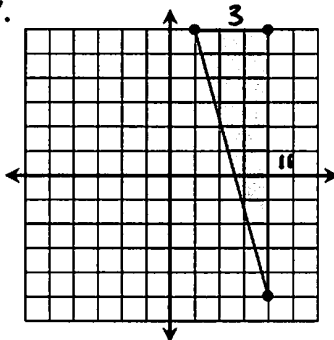
6.



$$A = \frac{1}{2}(12)(7)$$

$$= 42$$

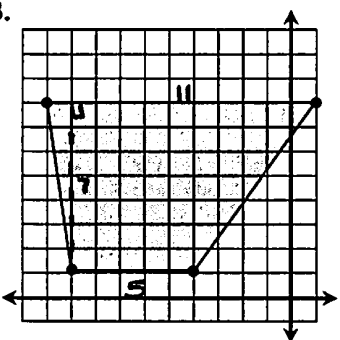
7.



$$A = \frac{1}{2}(3)(11)$$

$$= 16.5$$

8.

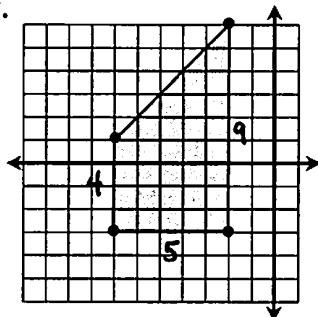


$$A = \frac{1}{2}(7)(11+5)$$

$$= 3.5(16)$$

$$= 56$$

9.

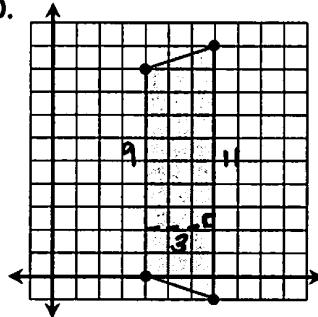


$$A = \frac{1}{2}(5)(4+9)$$

$$= 2.5(13)$$

$$= 32.5$$

10.

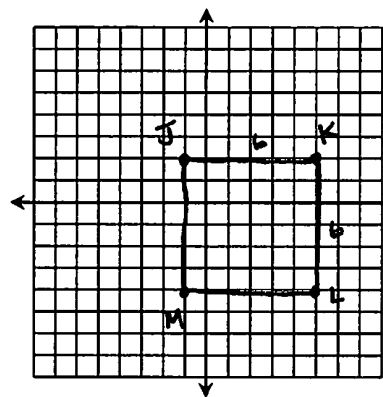


$$A = \frac{1}{2}(3)(9+11)$$

$$= 1.5(20)$$

$$= 30$$

Directions: Graph the polygon, then find the **perimeter and area** of the polygon.

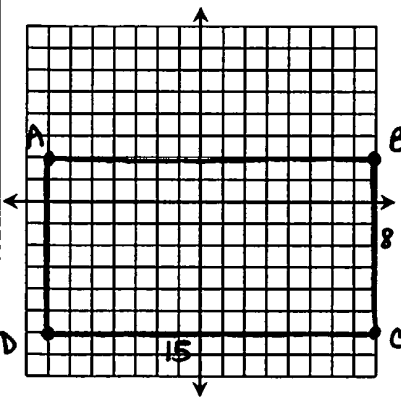
11. $J(-1, 2)$, $K(5, 2)$, $L(5, -4)$, $M(-1, -4)$ 

$$P = 4(6)$$

$$P = 24$$

$$A = 6^2$$

$$A = 36$$

12. $A(-7, 2)$, $B(8, 2)$, $C(8, -6)$, $D(-7, -6)$ 

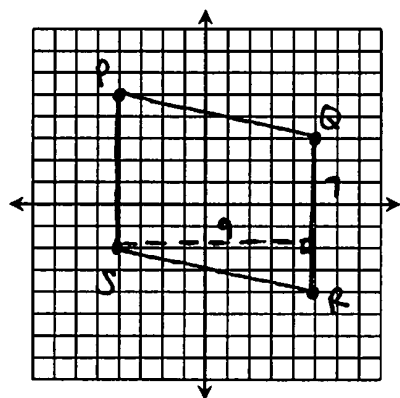
$$P = 2(8) + 2(15)$$

$$P = 46$$

$$A = 8(15)$$

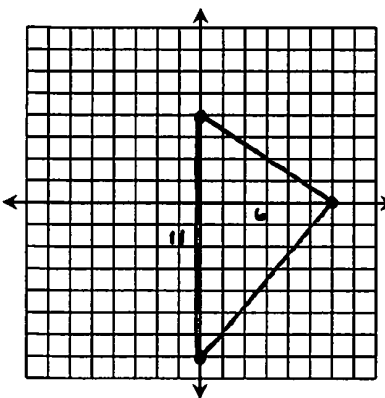
$$A = 120$$

Directions: Graph the polygon, then find the **area** of the polygon.

13. $P(-4, 5)$, $Q(5, 3)$, $R(5, -4)$, $S(-4, -2)$ 

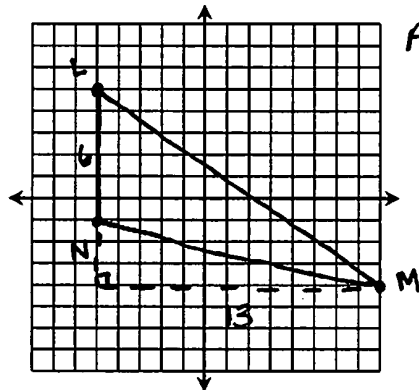
$$A = 7(9)$$

$$= 63$$

14. $W(0, 4)$, $X(6, 0)$, $Z(0, -7)$ 

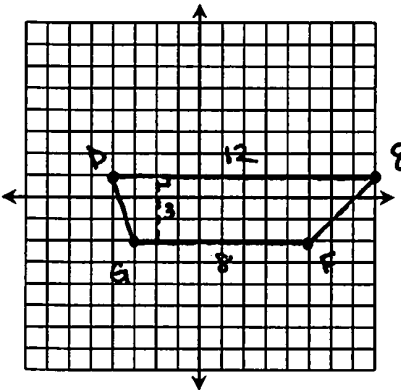
$$A = \frac{1}{2}(11)(6)$$

$$= 33$$

15. $L(-5, 5)$, $M(8, -4)$, $N(-5, -1)$ 

$$A = \frac{1}{2}(6)(13)$$

$$= 39$$

16. $D(-4, 1)$, $E(8, 1)$, $F(5, -2)$, $G(-3, -2)$ 

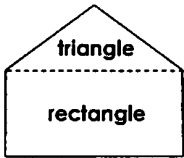
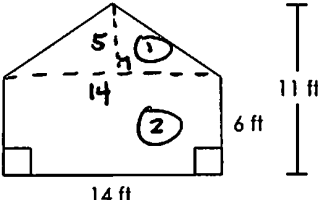
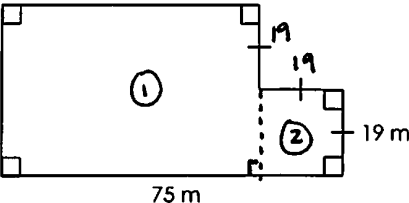
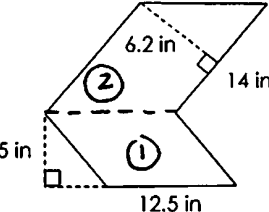
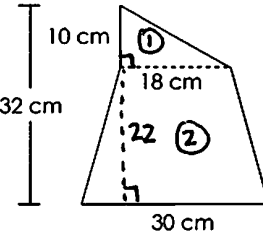
$$A = \frac{1}{2}(3)(12+8)$$

$$= 1.5(20)$$

$$= 30$$

Name:	Date:
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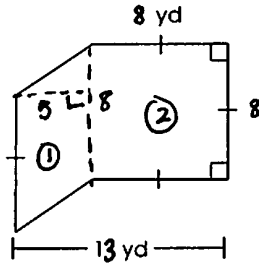
Topic:	Class:
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Main Ideas/Questions	Notes/Examples	
COMPOSITE <i>Figure</i>	A figure that can be separated into regions that are basic plane figures	
		
	To find the area of a composite figure:	
<i>Finding</i> AREA	1	Break the figure apart into shapes with areas you can find. (squares, rectangles, parallelograms, triangles, trapezoids)
	2	Find the area of each of these shapes.
	3	Find the sum of these areas.
EXAMPLES	Find the area of each figure.	
	1.	 $A_1 = \frac{1}{2} (14)(5) = 35$ $A_2 = 14(6) = 84$ $\text{Area} = 35 + 84 = \boxed{119 \text{ ft}^2}$
	2.	 $A_1 = 38(56) = 2128$ $A_2 = 19^2 = 361$ $\text{Area} = 2128 + 361 = \boxed{2489 \text{ m}^2}$
	3.	 $A_1 = 12.5(5) = 62.5$ $A_2 = 6.2(14) = 86.8$ $\text{Area} = 62.5 + 86.8 = \boxed{149.3 \text{ in}^2}$
	4.	 $A_1 = \frac{1}{2} (18)(10) = 90$ $A_2 = \frac{1}{2} (22)(18+30) = 11(48) = 528$ $\text{Area} = 90 + 528 = \boxed{618 \text{ cm}^2}$

COORDINATE PLANE

Examples

5.

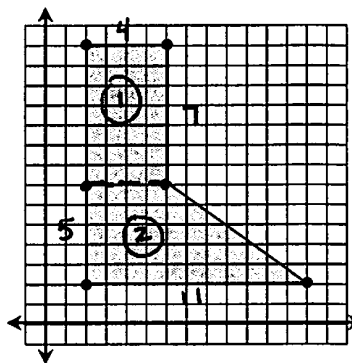


$$A_1 = 8(5) = 40$$

$$A_2 = 8^2 = 64$$

$$\text{Area} = 40 + 64 = \boxed{104 \text{ yd}^2}$$

6.

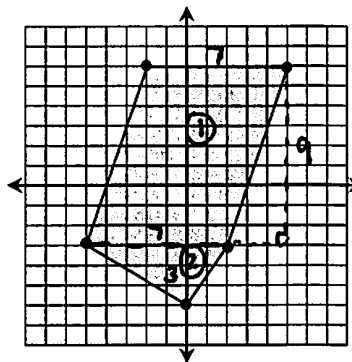


$$A_1 = 4(7) = 28$$

$$\begin{aligned} A_2 &= \frac{1}{2}(5)(11+4) \\ &= 2.5(15) \\ &= 37.5 \end{aligned}$$

$$\text{Area} = 28 + 37.5 = \boxed{65.5}$$

7.

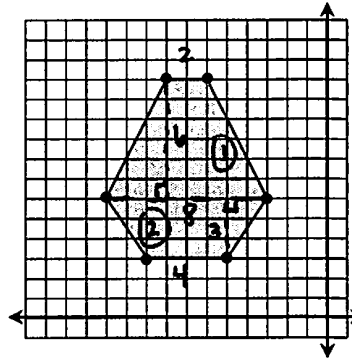


$$A_1 = 7(9) = 63$$

$$A_2 = \frac{1}{2}(7)(3) = 10.5$$

$$\text{Area} = 63 + 10.5 = \boxed{73.5}$$

8.



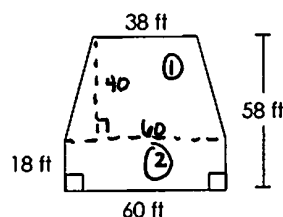
$$\begin{aligned} A_1 &= \frac{1}{2}(6)(2+8) \\ &= 3(10) = 30 \end{aligned}$$

$$\begin{aligned} A_2 &= \frac{1}{2}(3)(8+4) \\ &= 1.5(12) = 18 \end{aligned}$$

$$\text{Area} = 30 + 18 = \boxed{48}$$

APPLICATION

9. In order to build a cabin, a wooded area with the dimensions shown below must be cleared. If the clearing company charges \$1.50 per square foot, how much will it cost to clear the land?



$$\begin{aligned} A_1 &= \frac{1}{2}(40)(38+60) \\ &= 20(98) = 1960 \end{aligned}$$

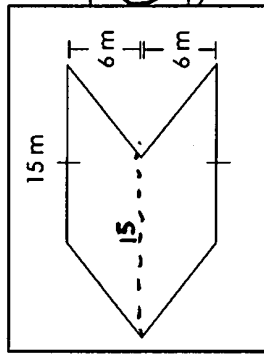
$$A_2 = 18(60) = 1080$$

$$\text{Area} = 1960 + 1080 = 3040 \text{ ft}^2$$

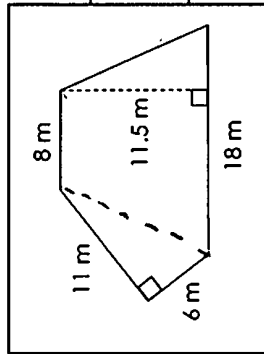
$$\begin{aligned} \text{Cost} &= 1.5(3040) \\ &= \boxed{\$4560} \end{aligned}$$

Area of Composite Figures Maze!

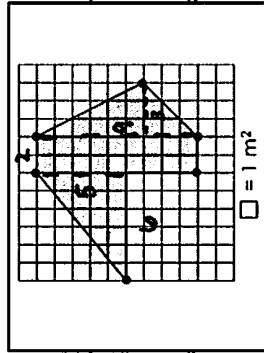
Directions: Find the area of each figure. Use your solutions to navigate through the maze. **SHOW ALL WORK** on a separate sheet of paper and attach it to this page!



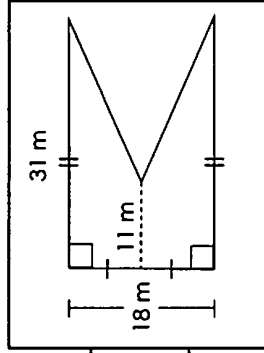
190 m²



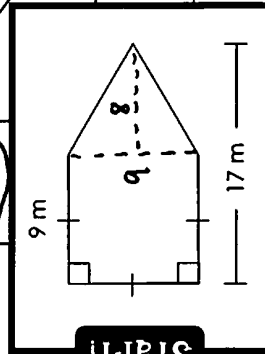
174.5 m²



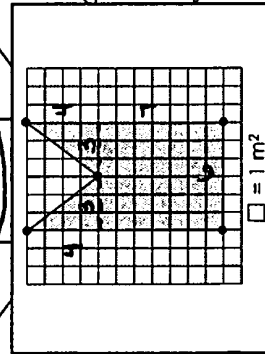
492 m²



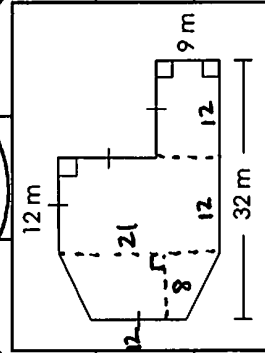
48.5 m²



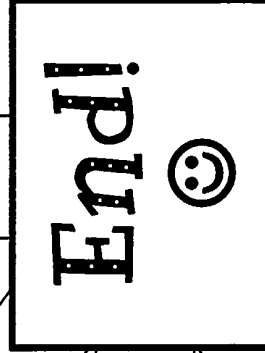
117 m²



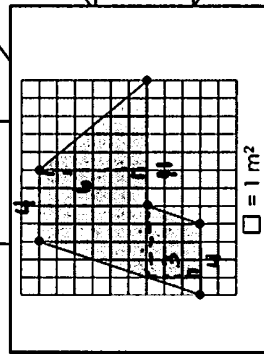
182.5 m²



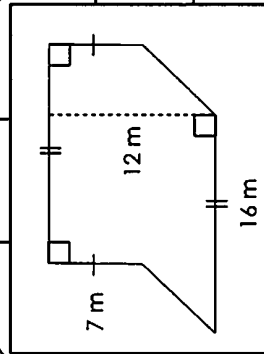
41.5 m²



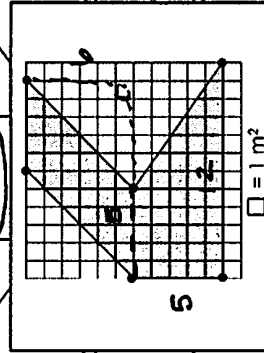
378 m²



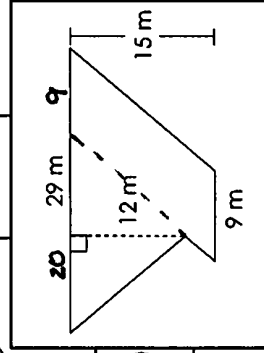
108 m²



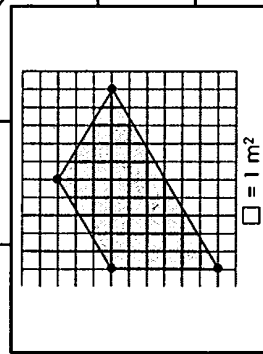
54 m²



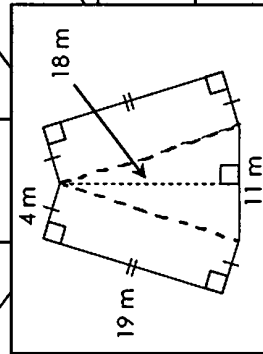
72.5 m²



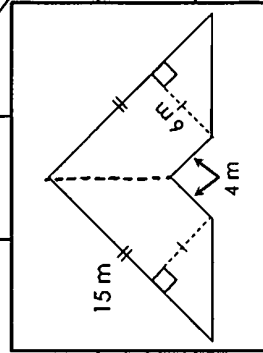
240 m²



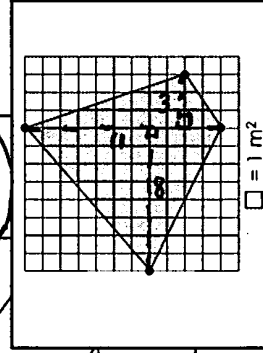
51 m²



57 m²



251 m²



60.5 m²

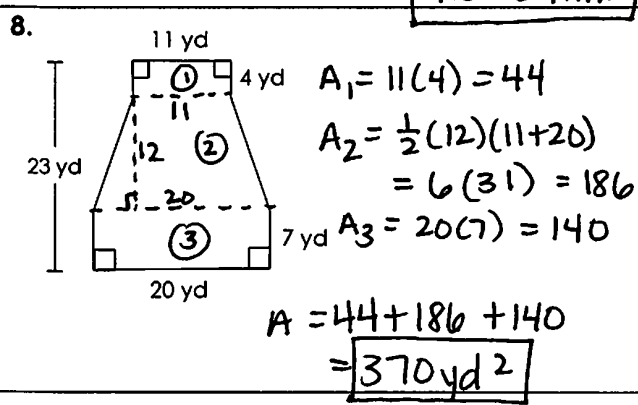
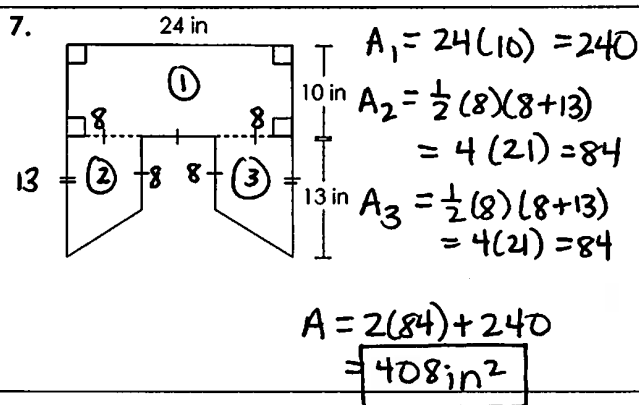
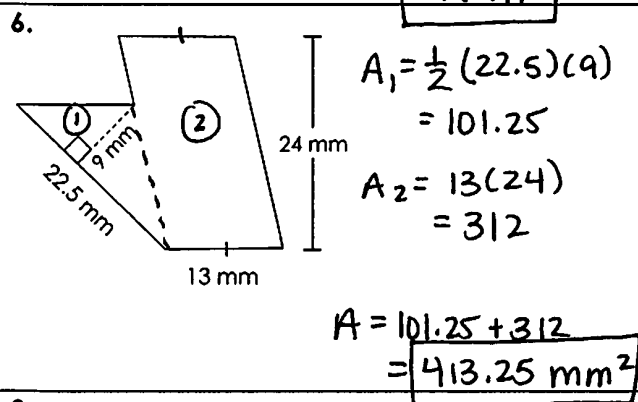
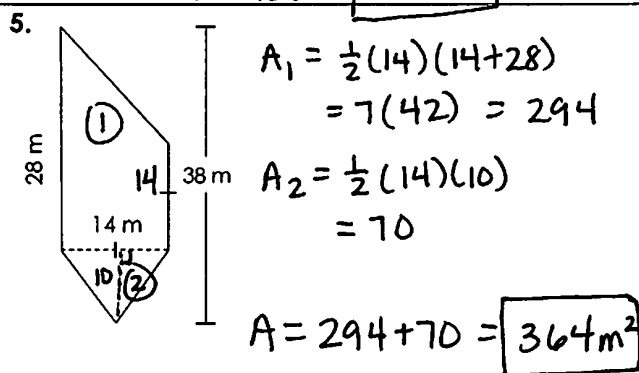
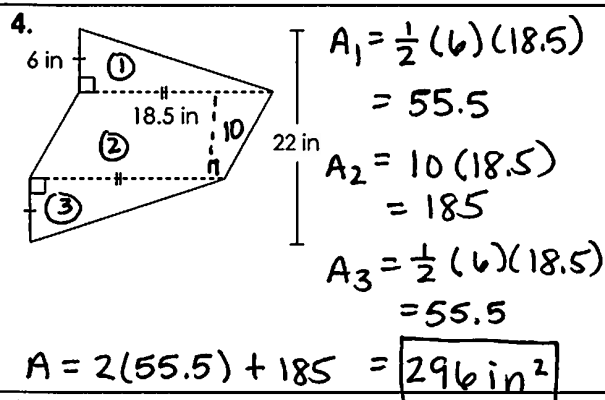
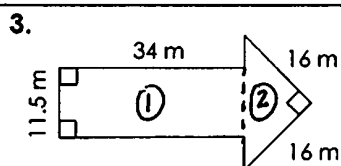
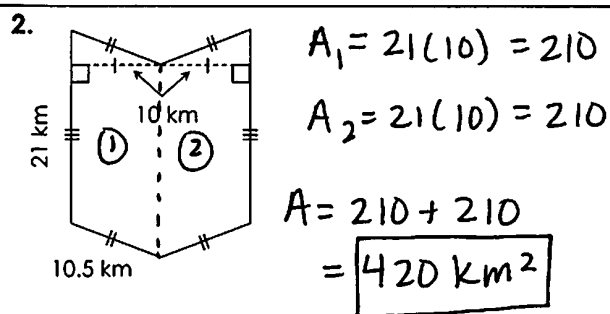
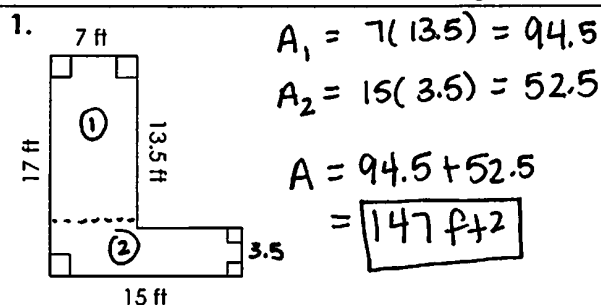
End!

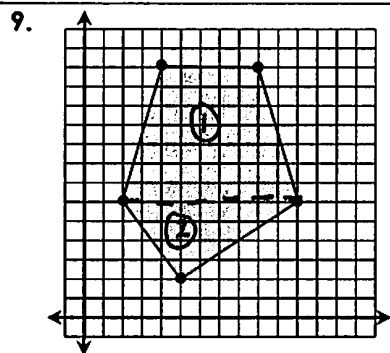
Name: _____

Unit 7: Measurement & Geometry

Date: _____ Per: _____

Homework 6: Area of Composite Figures

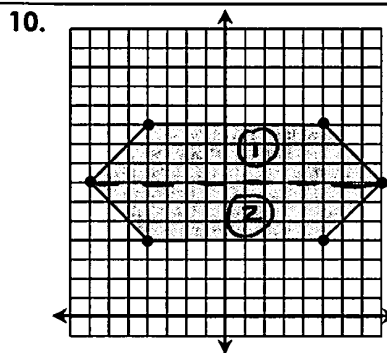
**** This is a 2-page document! ******Directions:** Find the area of each figure.



$$A_1 = \frac{1}{2}(7)(5+9) = 49$$

$$A_2 = \frac{1}{2}(4)(9) = 18$$

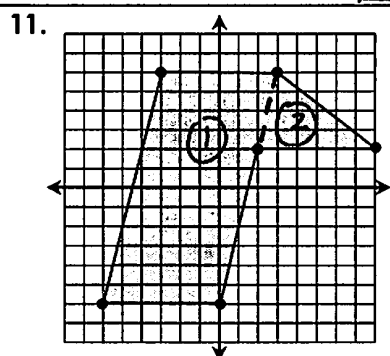
$$A = 49 + 18 = \boxed{67}$$



$$A_1 = \frac{1}{2}(3)(9+15) = 1.5(24) = 36$$

$$A_2 = \frac{1}{2}(3)(9+15) = 1.5(24) = 36$$

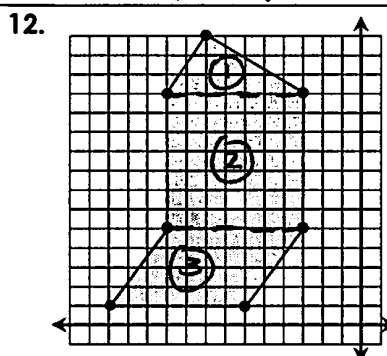
$$A = 2(36) = \boxed{72}$$



$$A_1 = 6(12) = 72$$

$$A_2 = \frac{1}{2}(6)(4) = 12$$

$$A = 72 + 12 = \boxed{84}$$



$$A_1 = \frac{1}{2}(7)(3) = 10.5$$

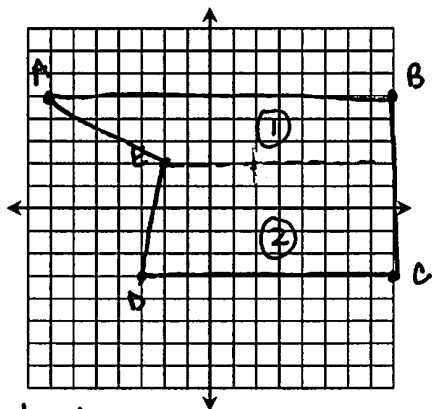
$$A_2 = 7(7) = 49$$

$$A_3 = 4(7) = 28$$

$$A = 10.5 + 49 + 28 = \boxed{87.5}$$

13. Graph the polygon with the given vertices below. Then find the area of the polygon.

$A(-7, 5)$, $B(8, 5)$, $C(8, -3)$, $D(-3, -3)$, $E(2, 2)$

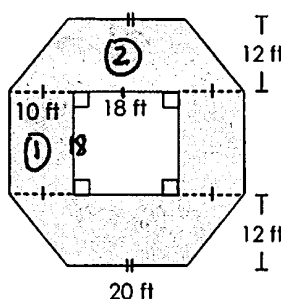


$$A_1 = \frac{1}{2}(3)(15+10) = 37.5$$

$$A_2 = \frac{1}{2}(5)(10+11) = 52.5$$

$$A = 37.5 + 52.5 = \boxed{90}$$

14. The shaded area below is a tile walkway surrounding a square-shaped exhibit at a museum. Find the total cost to seal the tile if sealing costs \$0.75 per square foot.



$$A_2 = \frac{1}{2}(12)(20+38) = 348$$

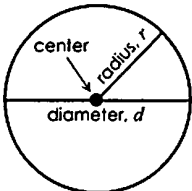
$$A_1 = 10(18) = 180$$

$$A = 2(348) + 2(180) = 696 + 360 = 1056 \text{ ft}^2$$

$$0.75(1056)$$

$$= \boxed{\$792}$$

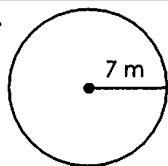
Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples	
CIRCLE	A set of points equidistant from a given point, called the center.	
PARTS of a circle 	Center: The given point in which all points are the same distance from.	
	Radius, r : The distance from the center to any point on the circle.	
	Diameter, d : The distance across the circle, through the center. The diameter is twice the radius. ($d = 2 \cdot r$)	
	1. A DVD has a radius of 60 millimeters. What is its diameter?	2. A bicycle tire has a diameter of 26 inches. What is its radius?
	120 mm	13 in
	3. Find the radius of a campaign button with a diameter of $2\frac{1}{4}$ inches.	4. A quarter has a radius of 0.48 inches. What is its diameter?
	$1\frac{1}{8}$ in	0.96 in
CIRCUMFERENCE of a circle	The distance around, or the perimeter of a circle	
	<div> <div>What is π?</div> <ul style="list-style-type: none"> π (read pi) is the <u>ratio</u> of the <u>circumference</u> of a circle to its <u>diameter</u>. This ratio remains constant for <u>all</u> <u>circles</u>! π is approximately <u>3.14</u> or <u>$\frac{22}{7}$</u>. </div>	
	<div> <div>FORMULA:</div> $C = 2\pi r$ </div>	
	Find the circumference of the circle with the given measurement.	
	5. radius = 4 inches $C = 2\pi(4)$ $= 8(3.14)$ $= \boxed{25.12 \text{ in}}$	6. diameter = 18 feet $\hookrightarrow r = 9 \text{ feet}$ $C = 2\pi(9)$ $= 18(3.14)$ $= \boxed{56.52 \text{ ft}}$

EXAMPLES

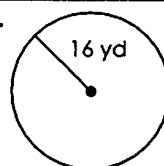
Find the circumference of each circle. Use 3.14 for pi.

7.



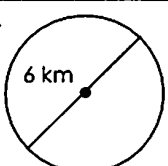
$$\begin{aligned} C &= 2\pi(7) \\ &= 14(3.14) \\ &= \boxed{43.96 \text{ m}} \end{aligned}$$

8.



$$\begin{aligned} C &= 2\pi(16) \\ &= 32(3.14) \\ &= \boxed{100.48 \text{ yd}} \end{aligned}$$

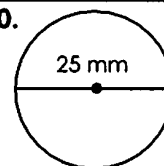
9.



$r = 3 \text{ km}$

$$\begin{aligned} C &= 2\pi(3) \\ &= 6(3.14) \\ &= \boxed{18.84 \text{ km}} \end{aligned}$$

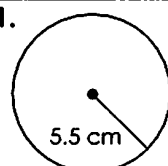
10.



$r = 12.5 \text{ mm}$

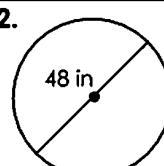
$$\begin{aligned} C &= 2\pi(12.5) \\ &= 25(3.14) \\ &= \boxed{78.5 \text{ mm}} \end{aligned}$$

11.



$$\begin{aligned} C &= 2\pi(5.5) \\ &= 11(3.14) \\ &= \boxed{34.54 \text{ cm}} \end{aligned}$$

12.



$r = 24 \text{ in}$

$$\begin{aligned} C &= 2\pi(24) \\ &= 48(3.14) \\ &= \boxed{150.72 \text{ in}} \end{aligned}$$

APPLICATIONS

13. A circular garden has a radius of 8 feet. If a landscaper is edging the garden, how many feet will he edge?

$$\begin{aligned} C &= 2\pi(8) \\ &= 16(3.14) \\ &= \boxed{50.24 \text{ ft}} \end{aligned}$$

14. A Ferris wheel has a diameter of 280 feet. How many feet will a passenger on the wheel travel in one revolution? $r = 140 \text{ ft}$

$$\begin{aligned} C &= 2\pi(140) \\ &= 280(3.14) \\ &= \boxed{879.2 \text{ ft}} \end{aligned}$$

15. A circular path with a diameter of 0.5 miles surrounds a lake. If Carrie ran around the path 4 times, how far did she run?

$$\begin{aligned} r &= 0.25 \text{ mi} \\ C &= 2\pi(0.25) \\ &= 0.5(3.14) \\ &= 1.57 \\ 4(1.57) &= \boxed{6.28 \text{ mi}} \end{aligned}$$

16. The minute hand on a clock is 4.5 inches long. How far will the hand travel in one hour?

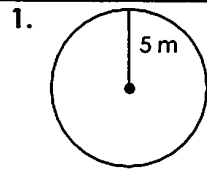
$$\begin{aligned} C &= 2\pi(4.5) \\ &= 9(3.14) \\ &= \boxed{28.26 \text{ in}} \end{aligned}$$

Name: _____

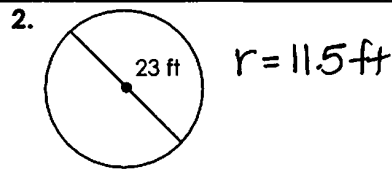
Unit 7: Measurement and Geometry

Date: _____ Per: _____

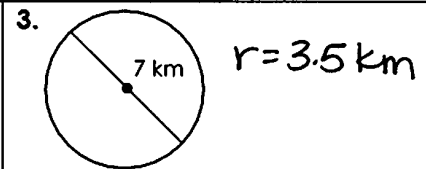
Homework 7: Circumference of Circles

Directions: Find the circumference of each circle with the given measure. Use 3.14 for pi.

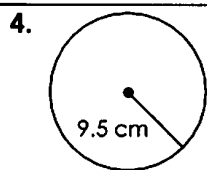
$$\begin{aligned} C &= 2\pi(5) \\ &= 10(3.14) \\ &= \boxed{31.4 \text{ m}} \end{aligned}$$



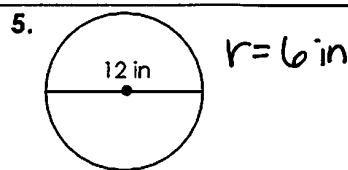
$$\begin{aligned} C &= 2\pi(11.5) \\ &= 23(3.14) \\ &= \boxed{72.22 \text{ ft}} \end{aligned}$$



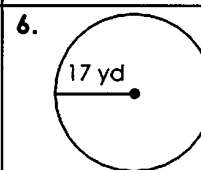
$$\begin{aligned} C &= 2\pi(3.5) \\ &= 7(3.14) \\ &= \boxed{21.98 \text{ km}} \end{aligned}$$



$$\begin{aligned} C &= 2\pi(9.5) \\ &= 19(3.14) \\ &= \boxed{59.66 \text{ cm}} \end{aligned}$$



$$\begin{aligned} C &= 2\pi(6) \\ &= 12(3.14) \\ &= \boxed{37.68 \text{ in}} \end{aligned}$$



$$\begin{aligned} C &= 2\pi(17) \\ &= 34(3.14) \\ &= \boxed{106.76 \text{ yd}} \end{aligned}$$

7. A traffic circle has a radius of 75 feet. If Jack rides his bike once around the circle, how far will he travel?

$$\begin{aligned} C &= 2\pi(75) \\ &= 150(3.14) \\ &= \boxed{471 \text{ ft}} \end{aligned}$$

8. How much further would a tire with a 28-inch diameter travel in one revolution than a tire with a 21-inch diameter?

$$\begin{aligned} C &= 2\pi(14) & C &= 2\pi(10.5) \\ &= 28(3.14) & &= 21(3.14) \\ &= 87.92 \text{ in} & &= 65.94 \text{ in} \\ & & &87.92 - 65.94 = \boxed{21.98 \text{ in}} \end{aligned}$$

9. Lisa is doing a craft with her preschoolers using paper plates with a 9-inch diameter. If yarn is to be glued around the edge of each plate and she has 15 children, how much yarn will she need?

$$\begin{aligned} C &= 2\pi(4.5) \\ &= 9(3.14) \\ &= 28.26 \text{ in} \end{aligned}$$

$$28.26(15) = \boxed{423.9 \text{ in}}$$

10. Sierra is riding on a carousel with a 10-foot radius. If she is located 1.5 feet from the edge of the carousel, how far will she travel in 5 revolutions?

$$\begin{aligned} C &= 2\pi(8.5) \\ &= 17(3.14) \\ &= 53.38 \text{ ft} \end{aligned}$$

$$53.38(5) = \boxed{266.9 \text{ ft}}$$

Name:

Date:

Topic:

Class:

Main Ideas/Questions

Notes/Examples

AREA

of a circle

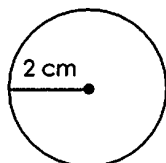
The amount of space
occupied by a circle.

FORMULA:

$$A = \pi r^2$$

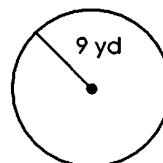
Find the area of each circle. Use 3.14 for pi.

1.



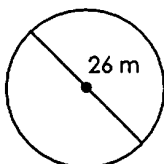
$$\begin{aligned} A &= \pi (2)^2 \\ &= 4(3.14) \\ &= \boxed{12.56 \text{ cm}^2} \end{aligned}$$

2.



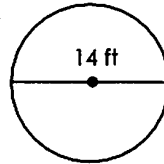
$$\begin{aligned} A &= \pi (9)^2 \\ &= 81(3.14) \\ &= \boxed{254.34 \text{ yd}^2} \end{aligned}$$

3.

 $r = 13 \text{ m}$

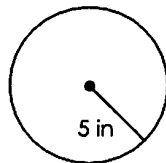
$$\begin{aligned} A &= \pi (13)^2 \\ &= 169(3.14) \\ &= \boxed{530.66 \text{ m}^2} \end{aligned}$$

4.

 $r = 7 \text{ ft}$

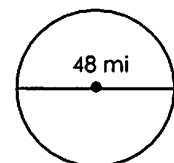
$$\begin{aligned} A &= \pi (7)^2 \\ &= 49(3.14) \\ &= \boxed{153.86 \text{ ft}^2} \end{aligned}$$

5.



$$\begin{aligned} A &= \pi (5)^2 \\ &= 25(3.14) \\ &= \boxed{78.5 \text{ in}^2} \end{aligned}$$

6.

 $r = 24 \text{ mi}$

$$\begin{aligned} A &= \pi (24)^2 \\ &= 576(3.14) \\ &= \boxed{1808.64 \text{ mi}^2} \end{aligned}$$

APPLICATIONS

7. A sprinkler sprays water in a circular area. If the sprinkler can spray up to 28 feet, what is the maximum area of lawn that the sprinkler can water?

$$\begin{aligned} A &= \pi (28)^2 \\ &= 784 (3.14) \\ &= \boxed{2461.76 \text{ ft}^2} \end{aligned}$$

8. A lighthouse beam makes a circle that reaches 15 miles from the lighthouse. Find the area lit by the lighthouse beam.

$$\begin{aligned} A &= \pi (15)^2 \\ &= 225 (3.14) \\ &= \boxed{706.5 \text{ mi}^2} \end{aligned}$$

9. A circular garden has a diameter of 16 feet. Find the area of the garden.

$$r = 8 \text{ ft}$$

$$\begin{aligned} A &= \pi (8)^2 \\ &= 64 (3.14) \\ &= \boxed{200.96 \text{ ft}^2} \end{aligned}$$

10. A glass window in the shape of a circle has a diameter of 38 inches. Find the area of the glass.

$$r = 19 \text{ in}$$

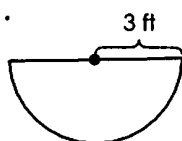
$$\begin{aligned} A &= \pi (19)^2 \\ &= 361 (3.14) \\ &= \boxed{1133.54 \text{ in}^2} \end{aligned}$$

SEMI-CIRCLES

A semicircle is one-half of a circle.

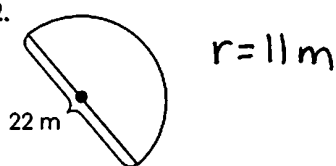
Find the area of each semicircle. Use 3.14 for pi.

11.



$$\begin{aligned} A &= \frac{1}{2} \pi (3)^2 \\ &= \frac{1}{2} (9) (3.14) \\ &= \boxed{14.13 \text{ ft}^2} \end{aligned}$$

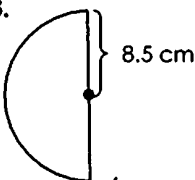
12.



$$\begin{aligned} A &= \frac{1}{2} \pi (11)^2 \\ &= \frac{1}{2} (121) (3.14) \\ &= \boxed{189.97 \text{ m}^2} \end{aligned}$$

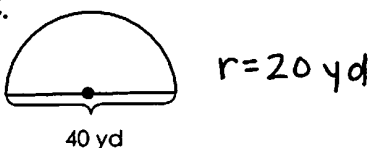
Find the circumference of each semicircle. Use 3.14 for pi.

13.



$$\begin{aligned} C &= \frac{1}{2} (2\pi 8.5) + 17 \\ &= 8.5 (3.14) + 17 \\ &= \boxed{43.69 \text{ cm}} \end{aligned}$$

14.



$$\begin{aligned} C &= \frac{1}{2} (2\pi 20) + 40 \\ &= 20 (3.14) + 40 \\ &= \boxed{102.8 \text{ yd}} \end{aligned}$$

WATCH OUT!

You need to add the diameter when finding the circumference of a semi-circle.

Name: _____

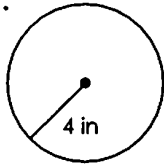
Unit 7: Measurement and Geometry

Date: _____ Per: _____

Homework 8: Area of Circles

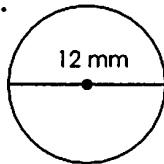
Directions: Find the area of each circle with the given measure. Use 3.14 for pi.

1.



$$\begin{aligned}
 A &= \pi(4)^2 \\
 &= 16(3.14) \\
 &= \boxed{50.24 \text{ in}^2}
 \end{aligned}$$

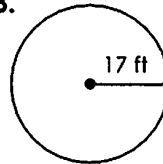
2.



$$r = 6 \text{ mm}$$

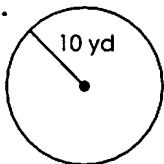
$$\begin{aligned}
 A &= \pi(6)^2 \\
 &= 36(3.14) \\
 &= \boxed{113.04 \text{ mm}^2}
 \end{aligned}$$

3.



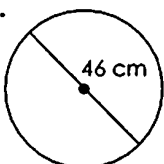
$$\begin{aligned}
 A &= \pi(17)^2 \\
 &= 289(3.14) \\
 &= \boxed{907.46 \text{ ft}^2}
 \end{aligned}$$

4.



$$\begin{aligned}
 A &= \pi(10)^2 \\
 &= 100(3.14) \\
 &= \boxed{314 \text{ yd}^2}
 \end{aligned}$$

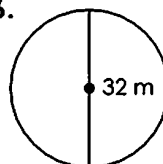
5.



$$r = 23 \text{ cm}$$

$$\begin{aligned}
 A &= \pi(23)^2 \\
 &= 529(3.14) \\
 &= \boxed{1661.06 \text{ cm}^2}
 \end{aligned}$$

6.



$$r = 16 \text{ m}$$

$$\begin{aligned}
 A &= \pi(16)^2 \\
 &= 256(3.14) \\
 &= \boxed{803.84 \text{ m}^2}
 \end{aligned}$$

7. A spotlight can light a circular area up to 24 feet in diameter. What is the maximum area that can be lit by the spotlight? $r = 12 \text{ ft}$

$$\begin{aligned}
 A &= \pi(12)^2 \\
 &= 144(3.14) \\
 &= \boxed{452.16 \text{ ft}^2}
 \end{aligned}$$

8. Sara is buying mulch to cover a circular garden with a radius of 14 feet. Find the area of the garden.

$$\begin{aligned}
 A &= \pi(14)^2 \\
 &= 196(3.14) \\
 &= \boxed{615.44 \text{ ft}^2}
 \end{aligned}$$

9. Manny is ordering a cover for his circular pool with a 22-foot diameter. If the company charges \$1.50 per square foot, how much will the cover cost? $r = 11 \text{ ft}$

$$\begin{aligned}
 A &= \pi(11)^2 \\
 &= 121(3.14) \\
 &= 379.94 \text{ ft}^2
 \end{aligned}$$

$$1.50(379.94) = \boxed{\$569.91}$$

10. Lia has a square piece of paper with a side length of 6 inches. She cut a circle out of the paper with a 3-inch radius. Find the area of the paper left.

$$\begin{aligned}
 A_{\text{circle}} &= \pi(3)^2 & A_{\text{square}} &= 6^2 \\
 &= 9(3.14) & &= 36 \text{ in}^2 \\
 &= 28.26 \text{ in}^2
 \end{aligned}$$

$$36 - 28.26 = \boxed{7.74 \text{ in}^2}$$

Name: _____

Math 6

Date: _____ Per: _____

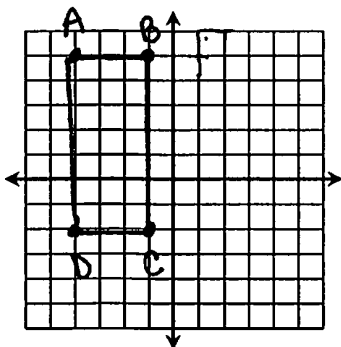
Unit 7: Measurement & Geometry

Quiz 7-2: Polygons on the Coordinate Plane, Composite Figures, & Circles

1. Graph the figure with the given vertices, then find the perimeter and area of the figure.

$A(-4, 5), B(-1, 5), C(-1, -2), D(-4, -2)$

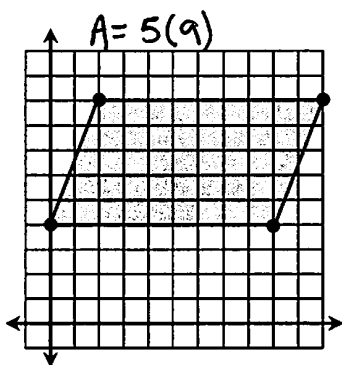
$$\begin{aligned} P &= 2(3) + 2(7) \\ &= 6 + 14 \\ &= 20 \end{aligned} \quad \begin{aligned} A &= 3(7) \\ &= 21 \end{aligned}$$



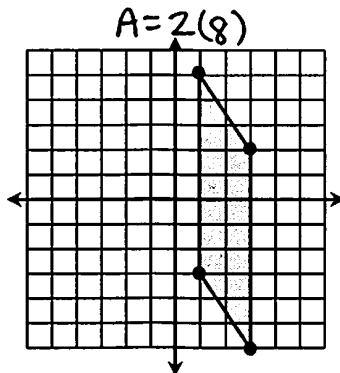
$$\begin{aligned} 1. \ P &= \underline{20} \\ A &= \underline{21} \end{aligned}$$

Find the area of each figure.

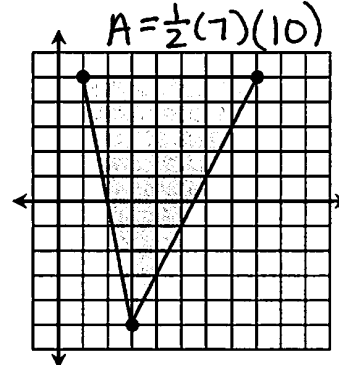
2. $A = \underline{45}$



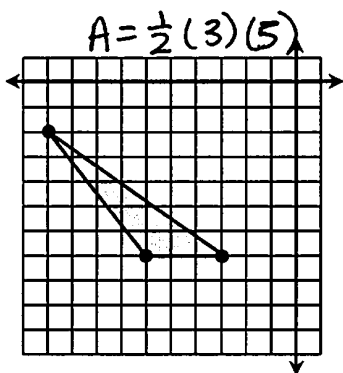
3. $A = \underline{16}$



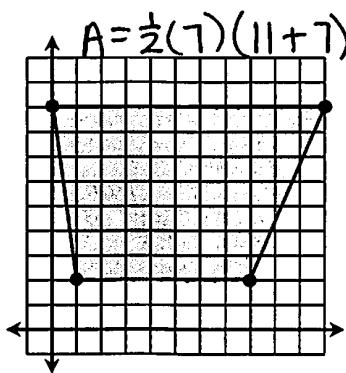
4. $A = \underline{35}$



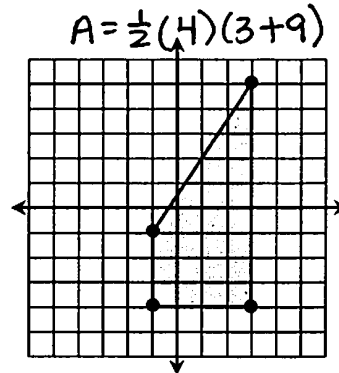
5. $A = \underline{7.5}$



6. $A = \underline{63}$

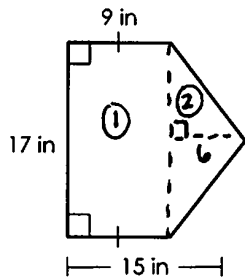


7. $A = \underline{24}$



Find the area of each composite figure.

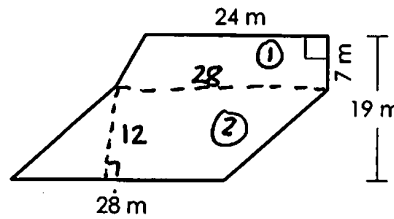
8. $A = \underline{204 \text{ in}^2}$



$$A_1 = 17(9) = 153$$

$$A_2 = \frac{1}{2}(17)(6) = 51$$

9. $A = \underline{518 \text{ m}^2}$



$$A_1 = \frac{1}{2}(7)(24+28)$$

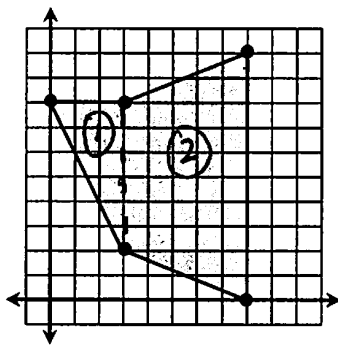
$$= 3.5(52)$$

$$= 182$$

$$A_2 = 12(28)$$

$$= 336$$

10. $A = \underline{49}$



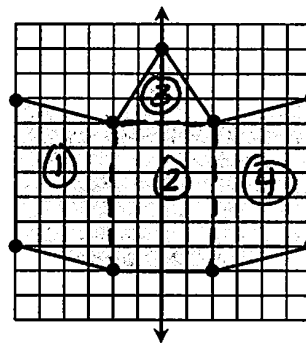
$$A_1 = \frac{1}{2}(3)(6)$$

$$= 9$$

$$A_2 = \frac{1}{2}(5)(6+10)$$

$$= 40$$

11. $A = \underline{78}$



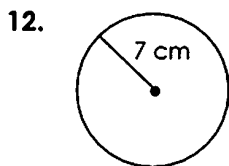
$$A_1 = 6(4) = 24$$

$$A_2 = 4(6) = 24$$

$$A_3 = \frac{1}{2}(4)(3) = 6$$

$$A_4 = 6(4) = 24$$

Find the circumference and area of each circle.



$$C = 2\pi(7)$$

$$= 14(3.14)$$

$$= 43.96$$

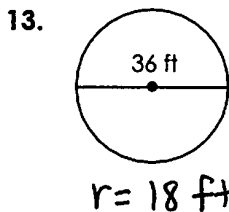
$$A = \pi(7)^2$$

$$= 49(3.14)$$

$$= 153.86$$

12. $C = \underline{43.96 \text{ cm}}$

$$A = \underline{153.86 \text{ cm}^2}$$



$$C = 2\pi(18)$$

$$= 36(3.14)$$

$$= 113.04$$

$$A = \pi(18)^2$$

$$= 324(3.14)$$

$$= 1017.36$$

13. $C = \underline{113.04 \text{ ft}}$

$$A = \underline{1017.36 \text{ ft}^2}$$

14. $\underline{53.38 \text{ ft}}$

15. $\underline{706.5 \text{ ft}^2}$

14. A trampoline has a 17-foot diameter. Find the length of the net that surrounds the trampoline. $r = 8.5 \text{ ft}$

$$C = 2\pi(8.5)$$

$$= 17(3.14)$$

$$= 53.38$$

15. A circular tarp has a radius of 15 feet. How many square feet of material was used to create the tarp?

$$A = \pi(15)^2$$

$$= 225(3.14)$$

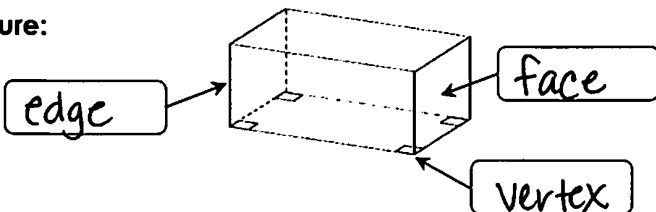
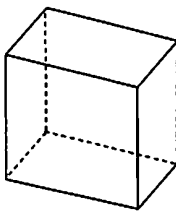
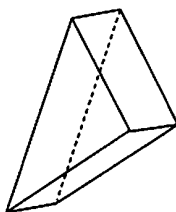
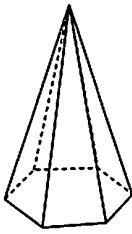
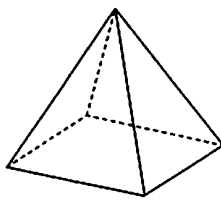
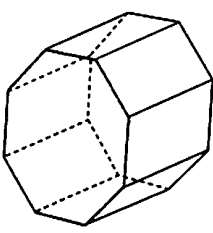
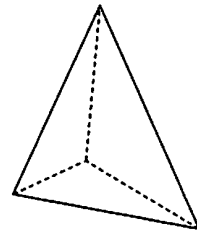
$$= 706.5$$

Name: _____

Date: _____

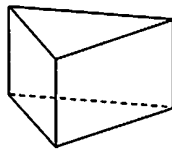
Topic: _____

Class: _____

Main Ideas/Questions	Notes/Examples		
What is a SOLID ?	A three-dimensional figure that encloses a space.		
	Parts of three-dimensional figures:		
	<ul style="list-style-type: none">A <u>face</u> is a "flat" surface.An <u>edge</u> is a line segment connecting two faces.A <u>Vertex</u> is a point connecting three or more edges.		
	Label the parts of the figure:		
	<div><div>edge</div><div>face</div><div>vertex</div></div>		
Find the number of faces, edges, and vertices of each solid.			
1. 	<div>Faces: 6</div> <div>Edges: 12</div> <div>Vertices: 8</div>	2. 	<div>Faces: 5</div> <div>Edges: 9</div> <div>Vertices: 6</div>
3. 	<div>Faces: 5</div> <div>Edges: 12</div> <div>Vertices: 7</div>	4. 	<div>Faces: 5</div> <div>Edges: 8</div> <div>Vertices: 5</div>
5. 	<div>Faces: 10</div> <div>Edges: 24</div> <div>Vertices: 16</div>	6. 	<div>Faces: 4</div> <div>Edges: 6</div> <div>Vertices: 4</div>

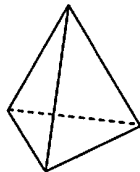
TYPES of Solids

PRISM



- A prism is a solid with **two bases** that are congruent and parallel.
- Prisms are named by their bases. The solid to the left is a **triangular prism** because the bases of the prism are triangles.

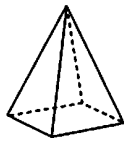
PYRAMID



- A pyramid is a solid with **one base** and sides that meet at a point.
- Pyramids are named by their base. The solid to the left is a **triangular pyramid** because the base of the pyramid is a triangle.

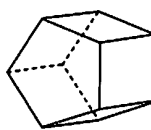
Classify each solid as a prism or a pyramid.

7.



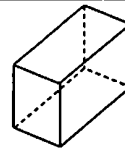
Pyramid

8.



Prism

9.



Prism

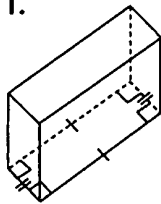
10.



Pyramid

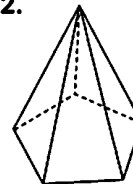
Name each solid.

11.



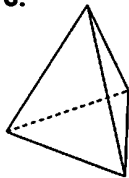
Rectangular
Prism

12.



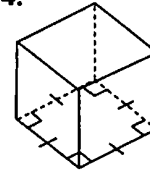
Pentagonal
Pyramid

13.



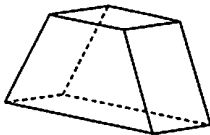
Triangular
Pyramid

14.



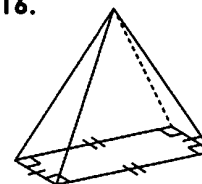
Square
Prism

15.



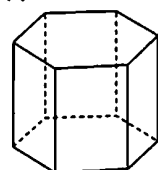
Trapezoidal
Prism

16.



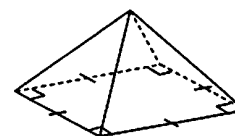
Rectangular
Pyramid

17.



Hexagonal
Prism

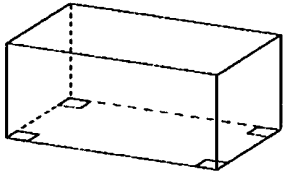
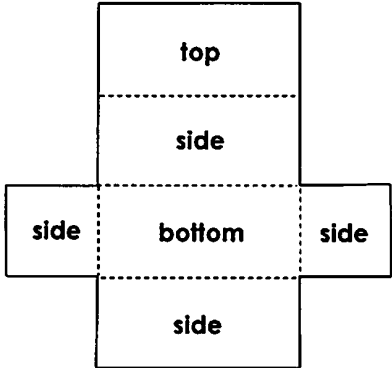
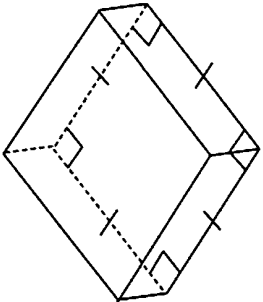
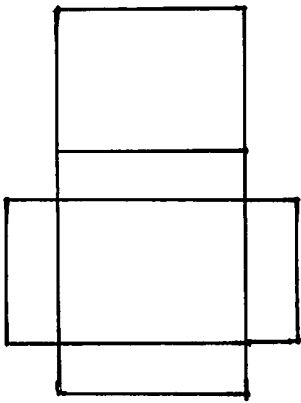
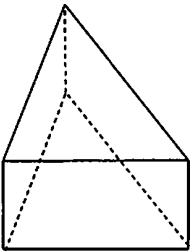
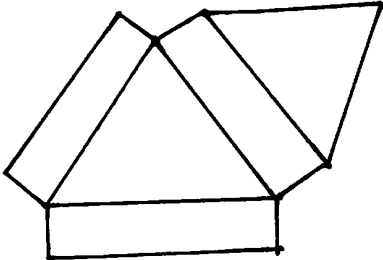
18.



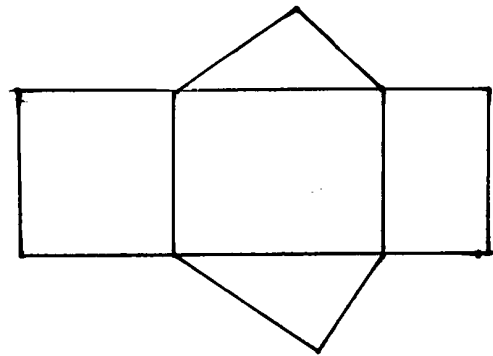
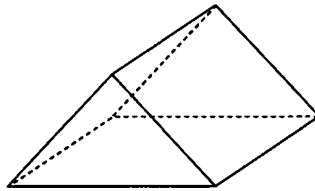
Square
Pyramid

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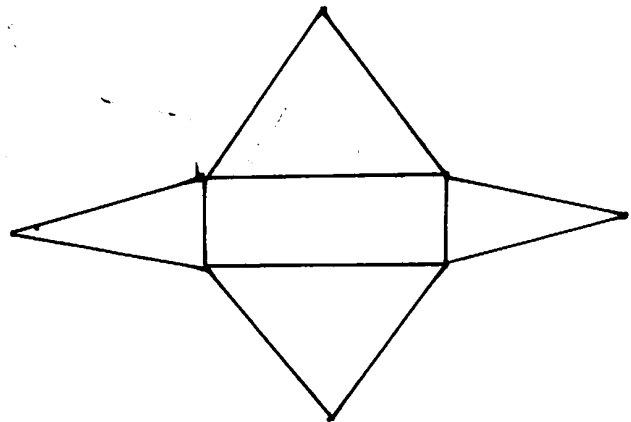
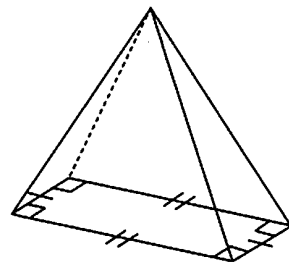
Topic:	Class:
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Main Ideas/Questions	Notes/Examples	
NETS <i>of 3d Figures</i>	When a three-dimensional figure is "cut" and "unfolded" onto a flat surface, the flat representation is called a net .	
	3-DIMENSIONAL FIGURE	NET
		
DRAWING <i>Nets</i>	There are many ways to draw a net. One method is to draw the base first, then draw the sides around the base then finally the top. Draw a net for each figure below.	
	3-DIMENSIONAL FIGURE	NET
	1. 	
	2. 	

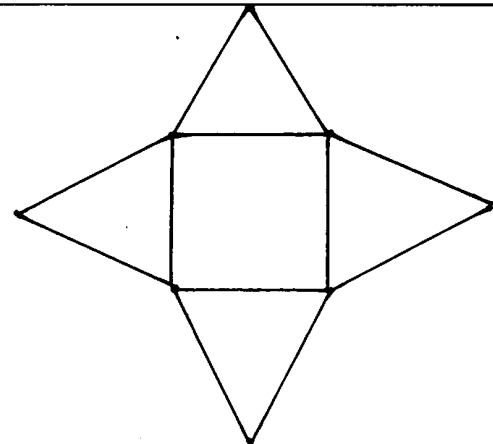
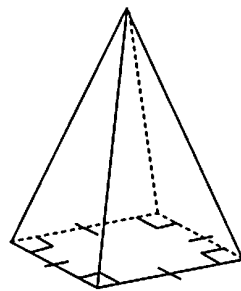
3.



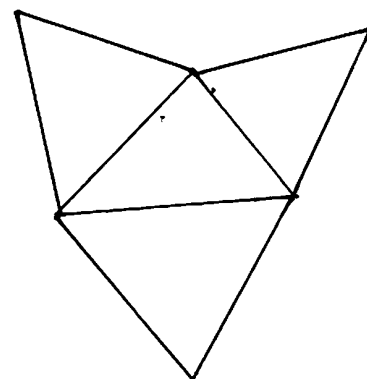
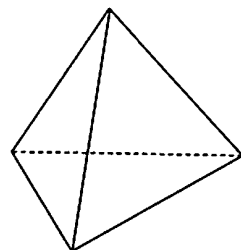
4.



5.



6.



Name: _____

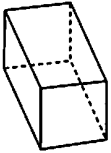
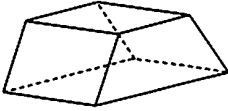

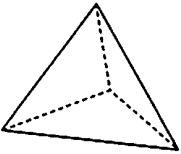
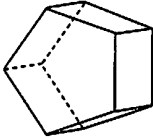
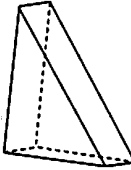
Unit 7: Measurement & Geometry



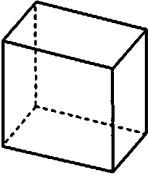
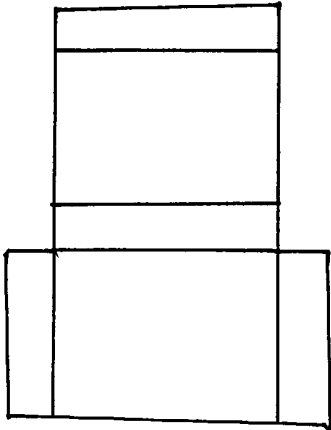
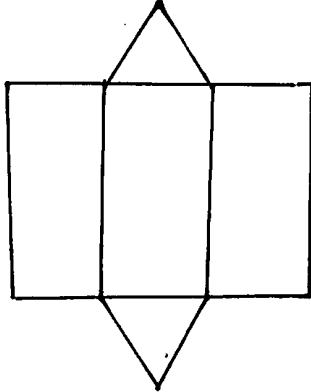
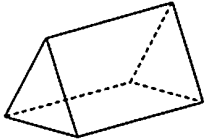
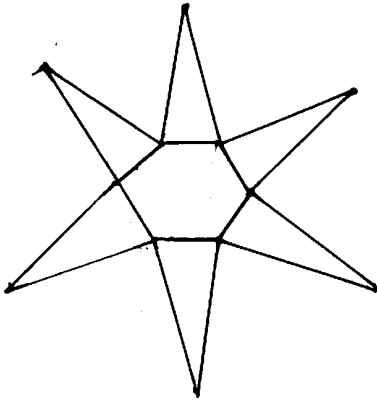
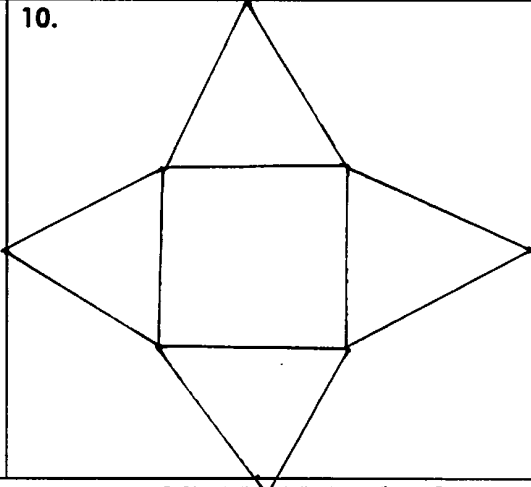
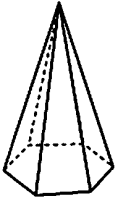
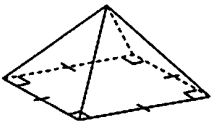
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Homework 9: Three-Dimensional Figures

Directions: Find the number of faces, edges, and vertices of each solid. Then name the solid.

1.		F: 6 E: 12 V: 8	2.		F: 6 E: 12 V: 8	3.		F: 6 E: 10 V: 6
Name: Rectangular Prism			Name: Trapezoidal Prism			Name: Pentagonal Pyramid		
4.		F: 4 E: 8 V: 4	5.		F: 7 E: 15 V: 10	6.		F: 5 E: 9 V: 6
Name: Triangular Pyramid			Name: Pentagonal Prism			Name: Triangular Prism		

Directions: Draw a net for each figure given to the left.

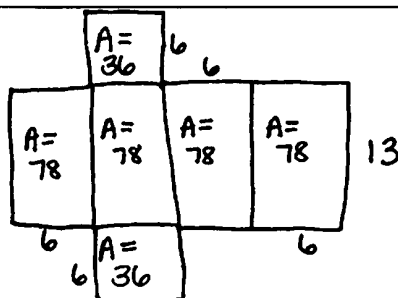
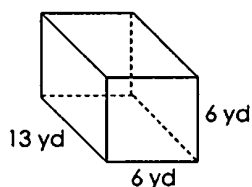
7.		7.		8.	
8.		9.		10.	
9.					
10.					

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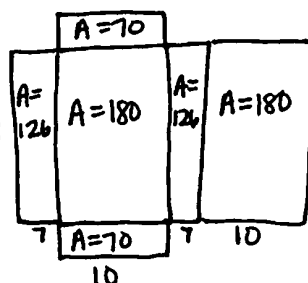
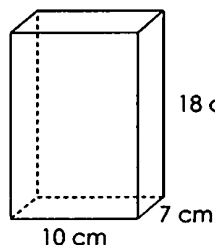
Main Ideas/Questions	Notes/Examples
SURFACE AREA	<p>The surface area is the sum of the areas of the bases and lateral faces.</p> <p>What can we use to find surface area? Nets!</p>
SURFACE AREA of Rectangular Prisms	<p>Label the dimensions on the given net, then find the surface area of the solid.</p> <div> <p>1.</p> <p>SA = $48 + 72 + 48 + 72 + 24 + 24$ $= 288 \text{ cm}^2$</p> </div> <div> <p>2.</p> <p>SA = $160 + 40 + 160 + 40 + 25 + 25$ $= 450 \text{ in}^2$</p> </div> <div> <p>3.</p> <p>SA = $33 + 55 + 55 + 33 + 33 + 55$ $= 206 \text{ m}^2$</p> </div>
DRAWING NETS	<p>Draw and label a net for the given solid, then find its surface area.</p> <div> <p>4.</p> <p>SA = $84 + 63 + 108 + 63 + 84 + 108$ $= 510 \text{ ft}^2$</p> </div>

5.



$$\begin{aligned}
 SA &= 78 + 36 + \\
 &\quad 78 + 36 + \\
 &\quad 78 + 78 \\
 &= 384 \text{ yd}^2
 \end{aligned}$$

6.

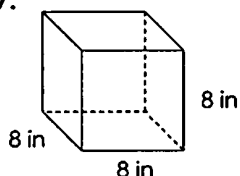


$$\begin{aligned}
 SA &= 126 + 70 + \\
 &\quad 180 + 70 + \\
 &\quad 126 + 180 \\
 &= 752 \text{ cm}^2
 \end{aligned}$$

CUBES

Because the surface area of each face of a cube is the same, the surface area of a cube with side length s is $SA = 6s^2$.

7.



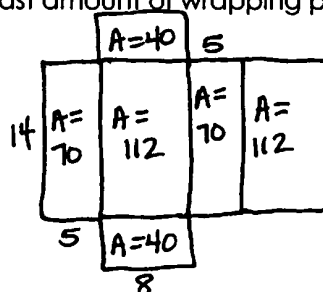
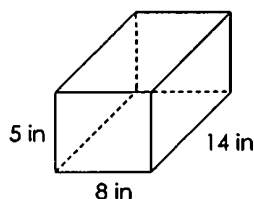
$$\begin{aligned}
 SA &= 6(8)^2 \\
 &= 6(64) = 384 \text{ in}^2
 \end{aligned}$$

8. Find the surface area of a cube with a side length of 3.5 feet.

$$\begin{aligned}
 SA &= 6(3.5)^2 \\
 &= 6(12.25) \\
 &= 73.5 \text{ ft}^2
 \end{aligned}$$

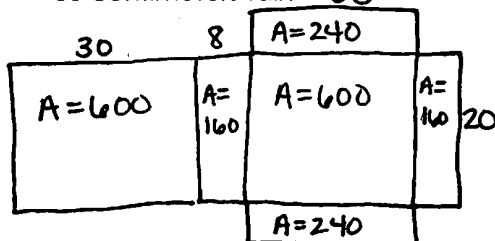
APPLICATIONS

9. A shoe box in the shape of a rectangular prism has the dimensions given below. What is the least amount of wrapping paper needed to wrap the box?



$$\begin{aligned}
 SA &= 70 + 40 + \\
 &\quad 112 + 40 + \\
 &\quad 70 + 112 \\
 &= 444 \text{ in}^2
 \end{aligned}$$

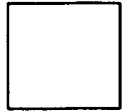
10. What is the minimum amount of cardboard needed to construct a box of cereal that is 8 centimeters by 20 centimeters at its base and 30 centimeters tall?



$$\begin{aligned}
 SA &= 600 + 160 + \\
 &\quad 240 + 600 + \\
 &\quad 240 + 160 \\
 &= 2000 \text{ cm}^2
 \end{aligned}$$

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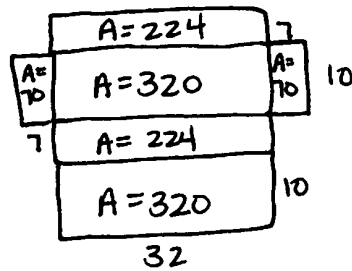
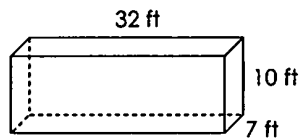
Homework 10: SA of Rectangular Prisms

**** This is a 2-page document! ****

Directions: Find the surface area of each rectangular prism. Draw nets for prisms 5-8.

FIGURE	NET	SURFACE AREA
<p>1.</p>		$SA = 45 + 55 + 99 + 55 + 45 + 99$ $= 398 \text{ ft}^2$
<p>2.</p>		$SA = 56 + 28 + 8 + 56 + 8 + 28$ $= 184 \text{ mm}^2$
<p>3.</p>		$SA = 45 + 180 + 36 + 45 + 36 + 180$ $= 522 \text{ cm}^2$
<p>4.</p>		$SA = 38.5 + 59.5 + 187 + 59.5 + 38.5 + 187$ $= 570 \text{ in}^2$
<p>5.</p>		$SA = 90 + 25 + 90 + 25 + 90 + 90$ $= 410 \text{ yd}^2$

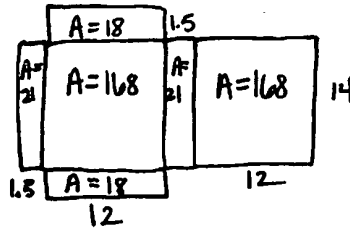
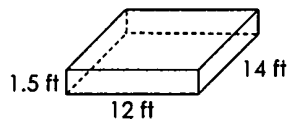
6.



$$SA = 224 + 70 + 320 \\ + 70 + 224 + 320$$

$$= 1228 \text{ ft}^2$$

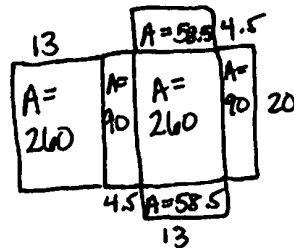
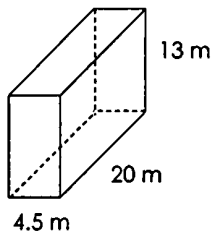
7.



$$SA = 21 + 18 + 168 \\ + 18 + 21 + 168$$

$$= 414 \text{ ft}^2$$

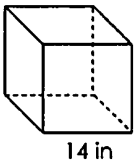
8.



$$SA = 260 + 90 + 260 \\ + 58.5 + 90 \\ + 58.5$$

$$= 817 \text{ m}^2$$

9. Find the surface area of the cube below.

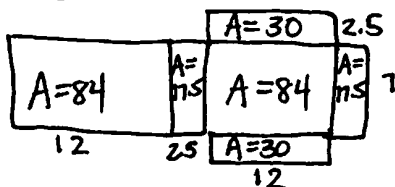


$$SA = 6(14)^2 \\ = 6(196) \\ = 1176 \text{ in}^2$$

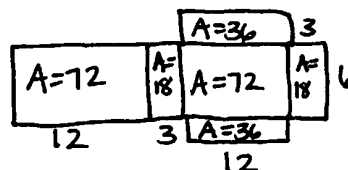
10. Find the surface area of a cube with a side length of 6.5 centimeters.

$$SA = 6(6.5)^2 \\ = 6(42.25) \\ = 253.5 \text{ cm}^2$$

11. A cereal box that is 12 inches tall measures 2.5 inches by 7 inches at its base. The company is considering changing the base dimensions to 3 inches by 6 inches with no change to its height. How much more or less cardboard is needed to construct the new cereal box?



$$SA = 84 + 17.5 + 30 \\ + 84 + 30 + 17.5 \\ = 263 \text{ in}^2$$



$$SA = 72 + 18 + 36 + \\ 72 + 36 + 18 \\ = 252 \text{ in}^2$$

11 in² less

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Main Ideas/Questions

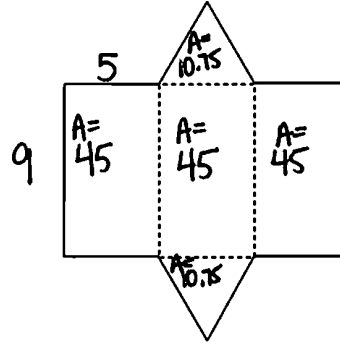
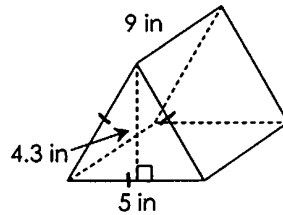
Notes/Examples

SURFACE AREA

of Triangular Prisms

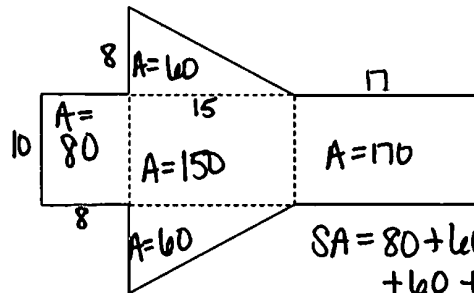
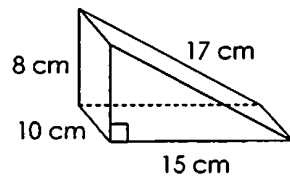
Label the dimensions on the given net, then find the surface area of the prism.

1.



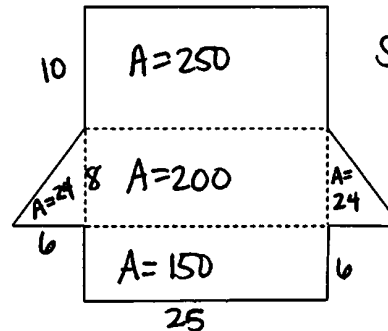
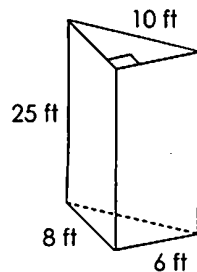
$$SA = 45 + 10.75 + 45 + 45 + 10.75 = 156.5 \text{ in}^2$$

2.



$$SA = 80 + 60 + 150 + 60 + 170 = 520 \text{ cm}^2$$

3.

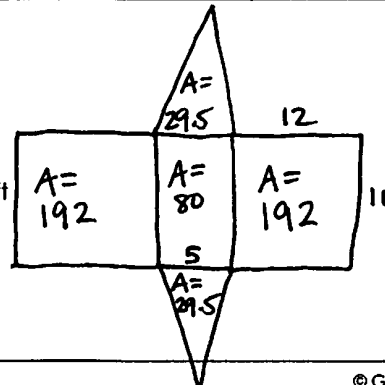
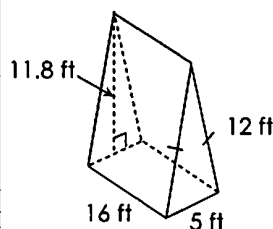


$$SA = 250 + 200 + 24 + 150 + 24 = 648 \text{ ft}^2$$

DRAWING NETS

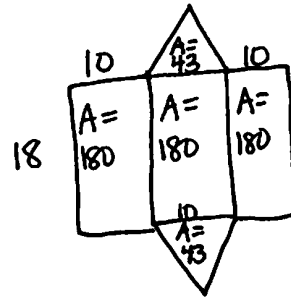
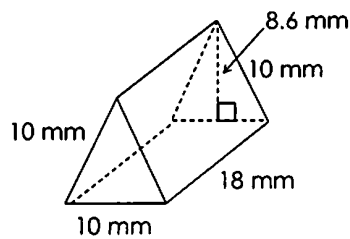
Draw and label a net for each prism, then find its surface area.

4.



$$SA = 192 + 29.5 + 80 + 192 + 29.5 = 523 \text{ ft}^2$$

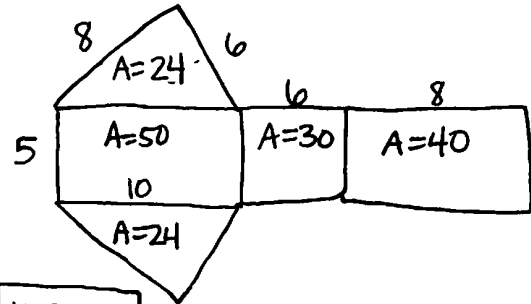
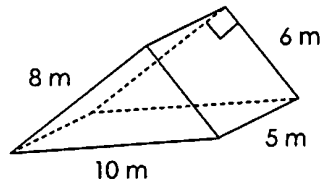
5.



$$SA = 180 + 180 + 180 + 180 + 180$$

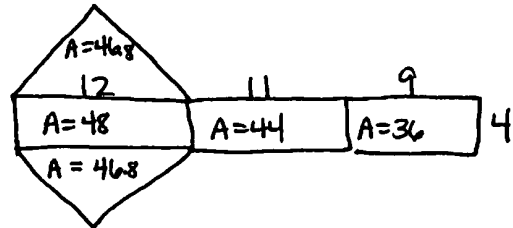
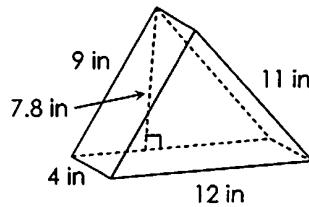
$$= 626 \text{ mm}^2$$

6.



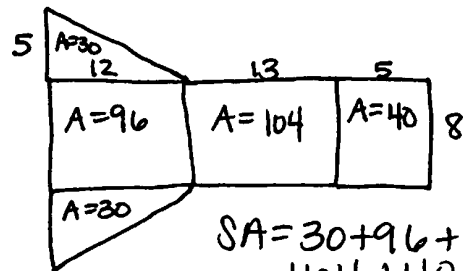
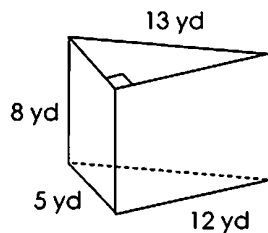
$$SA = 24 + 50 + 24 + 30 + 40 = 168 \text{ m}^2$$

7.



$$SA = 46.8 + 48 + 46.8 + 44 + 36 = 221.6 \text{ in}^2$$

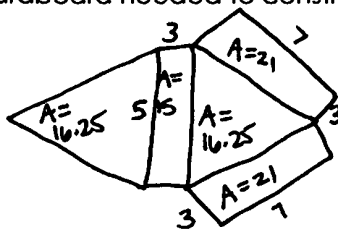
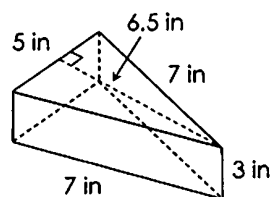
8.



$$SA = 30 + 96 + 30 + 104 + 40 = 300 \text{ yd}^2$$

APPLICATION

9. A cardboard pie box has the dimensions shown below. What is the minimum amount of cardboard needed to construct the box?



$$SA = 21 + 16.25 + 21 + 16.25 + 21$$

$$= 89.5 \text{ in}^2$$

Name: _____

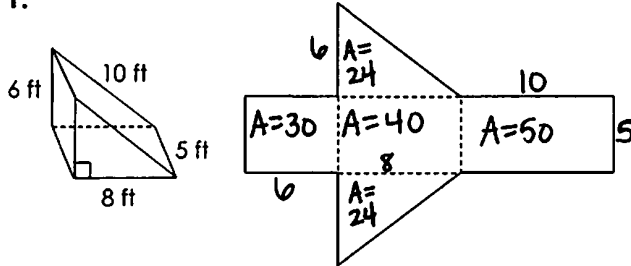
Unit 7: Measurement & Geometry

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Homework 11: SA of Triangular Prisms

Directions: Use the net to find the surface area of each triangular prism.

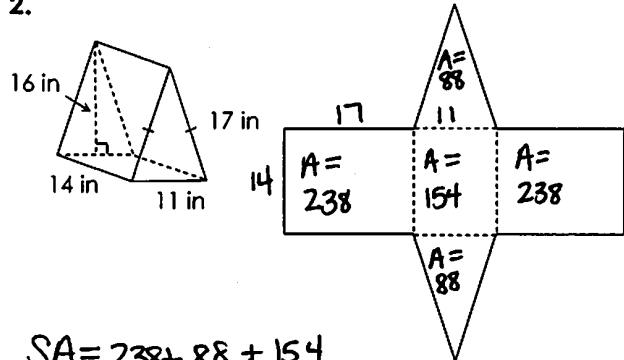
1.



$$SA = 30 + 24 + 40 + 24 + 50$$

$$= 168 \text{ ft}^2$$

2.

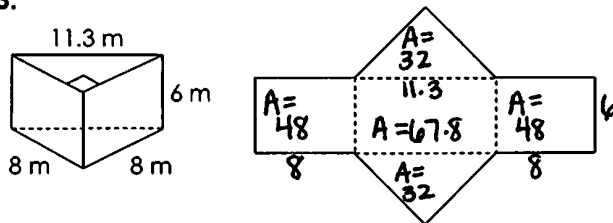


$$SA = 238 + 88 + 154$$

$$+ 88 + 238$$

$$= 806 \text{ in}^2$$

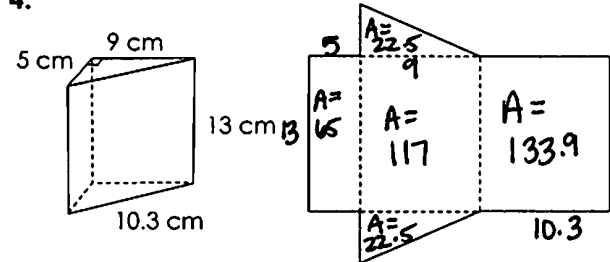
3.



$$SA = 48 + 32 + 67.8 + 32 + 48$$

$$= 227.8 \text{ m}^2$$

4.

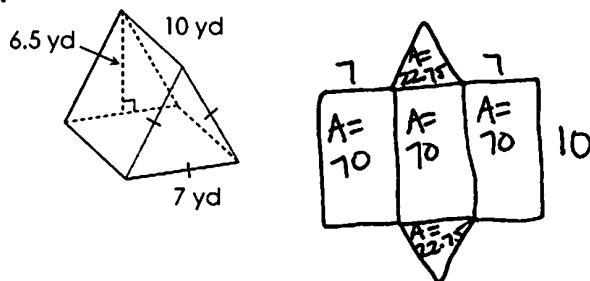


$$SA = 65 + 117 + 133.9 + 22.5 + 22.5$$

$$= 360.9 \text{ cm}^2$$

Directions: Find the surface area of the triangular prism by drawing a net.

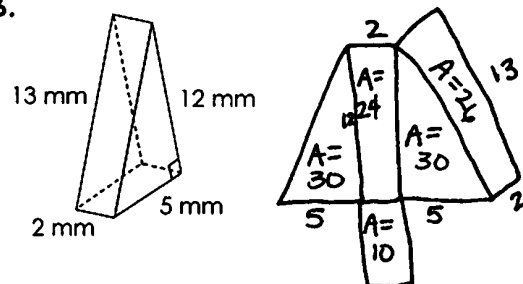
5.



$$SA = 70 + 22.75 + 70 + 22.75 + 70$$

$$= 255.5 \text{ yd}^2$$

6.



$$SA = 30 + 24 + 10 + 30 + 26$$

$$= 120 \text{ mm}^2$$

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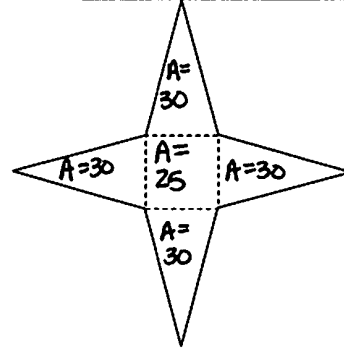
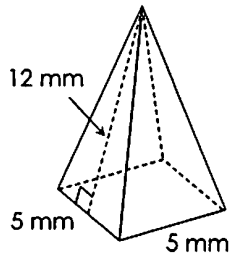
Main Ideas/Questions

Notes/Examples

SURFACE AREA of Square Pyramids

Label the dimensions on the given net, then find the surface area of the solid.

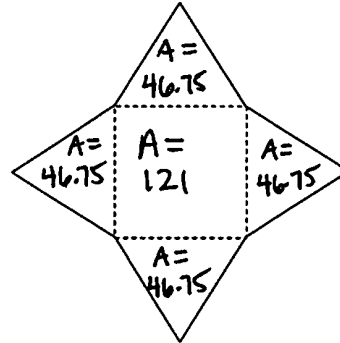
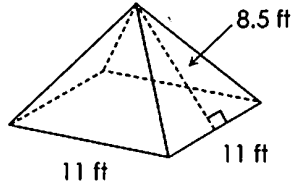
1.



$$SA = 4(30) + 25$$

$$= 145 \text{ mm}^2$$

2.



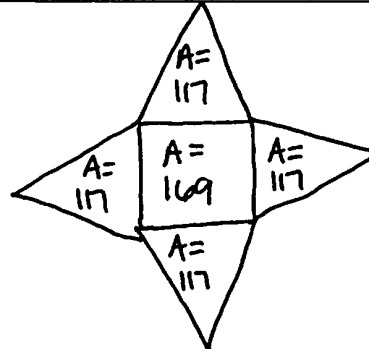
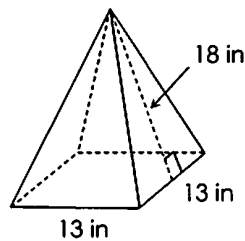
$$SA = 4(46.75) + 121$$

$$= 308 \text{ ft}^2$$

DRAWING **NETS**

Draw and label a net for each prism, then find its surface area.

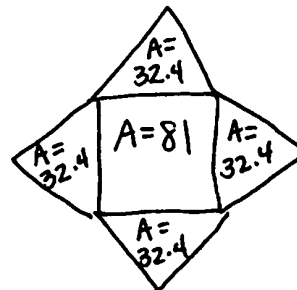
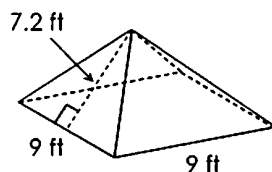
3.



$$SA = 4(117) + 169$$

$$= 637 \text{ in}^2$$

4.



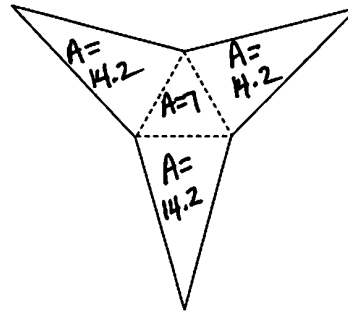
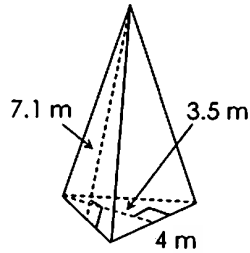
$$SA = 4(32.4) + 81$$

$$= 210.6 \text{ ft}^2$$

SURFACE AREA of Triangular Pyramids

The base of each of the following pyramids is an equilateral triangle. Use the net to find the surface area of each triangle.

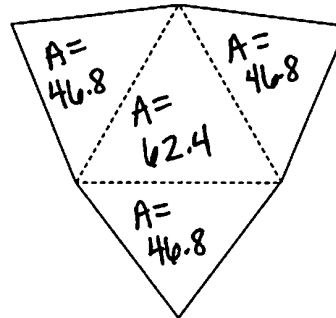
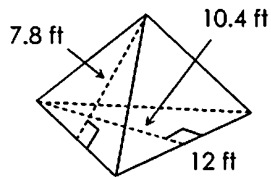
5.



$$SA = 3(14.2) + 7$$

$$= 49.6 \text{ m}^2$$

6.



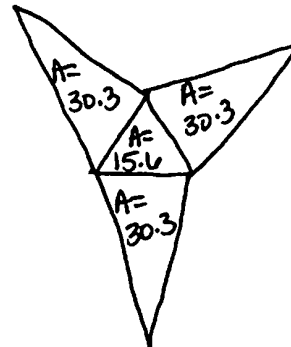
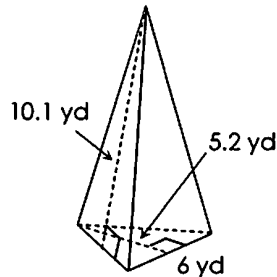
$$SA = 3(46.8)$$

$$+ 62.4$$

$$= 202.8 \text{ ft}^2$$

DRAWING NETS

7.



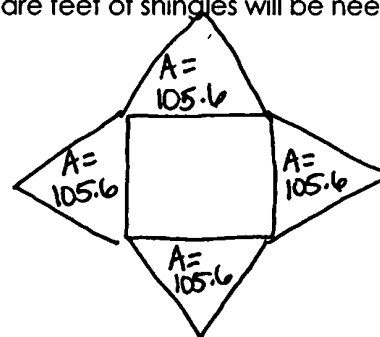
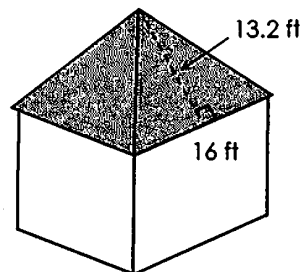
$$SA = 3(30.3)$$

$$+ 15.6$$

$$= 106.5 \text{ yd}^2$$

APPLICATION

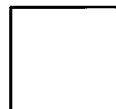
8. The roof of a shed is in the shape of a square-based pyramid. If the roof is being replaced, how many square feet of shingles will be needed?



$$4(105.6) = 422.4 \text{ ft}^2$$

Name: _____

Unit 7: Measurement & Geometry



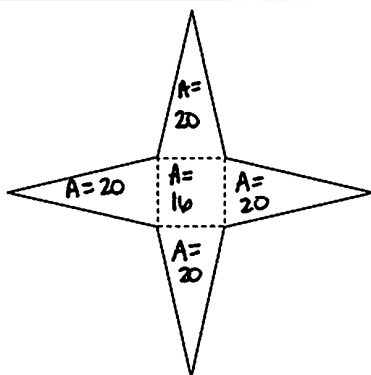
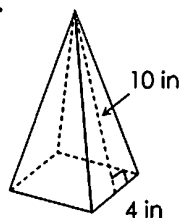
Date: _____ Per: _____

Homework 12: Surface Area of Pyramids

**** This is a 2-page document! ****

Directions: Find the surface area of each square pyramid. Draw nets for #3 and #4.

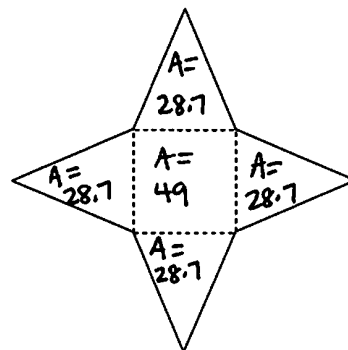
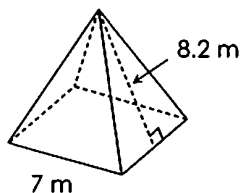
1.



$$SA = 16 + 4(20)$$

$$= 96 \text{ in}^2$$

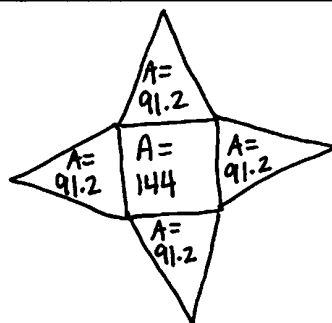
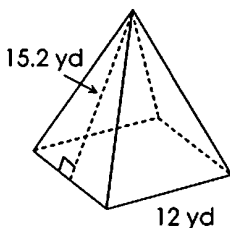
2.



$$SA = 49 + 4(28.7)$$

$$= 163.8 \text{ m}^2$$

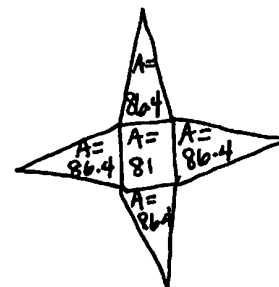
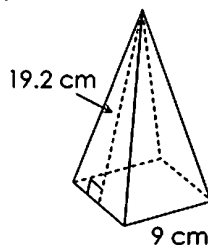
3.



$$SA = 144 + 4(91.2)$$

$$= 508.8 \text{ yd}^2$$

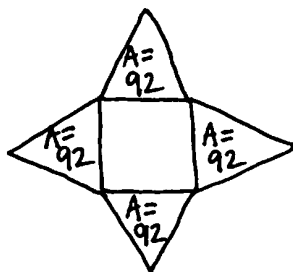
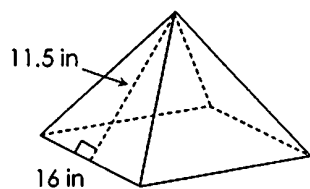
4.



$$SA = 81 + 4(86.4)$$

$$= 426.6 \text{ cm}^2$$

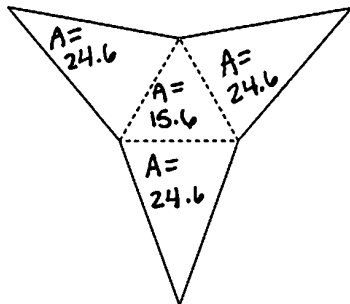
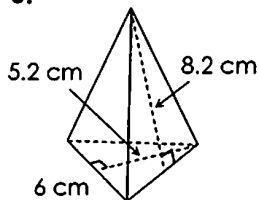
5. A canvas lamp shade is in the shape of a square pyramid with the dimensions given below. What is the minimum amount of fabric needed to make the shade?



$$4(92) = 368 \text{ in}^2$$

Directions: Find the surface area of each triangular pyramid. Draw nets for #8 and #9.
(Assume all bases are equilateral triangles.)

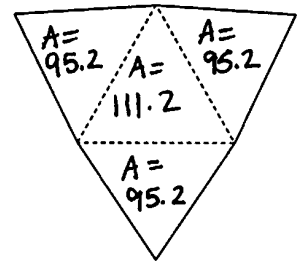
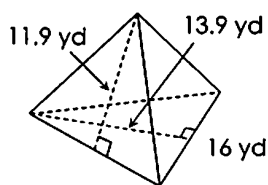
6.



$$SA = 15.6 + 3(24.6)$$

$$= 89.4 \text{ cm}^2$$

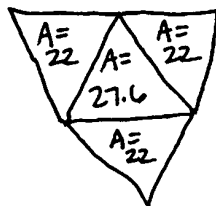
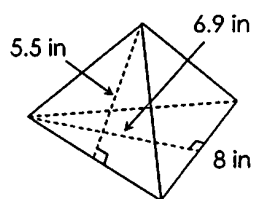
7.



$$SA = 111.2 + 3(95.2)$$

$$= 396.8 \text{ yd}^2$$

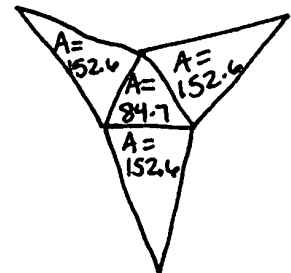
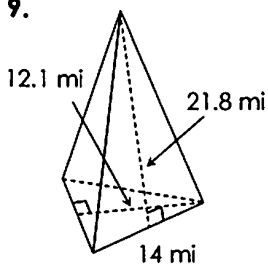
8.



$$SA = 27.6 + 3(22)$$

$$= 93.6 \text{ in}^2$$

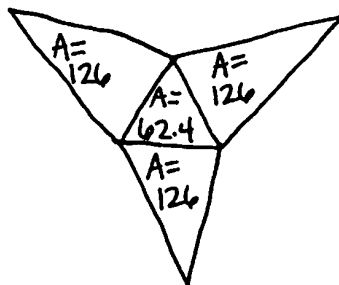
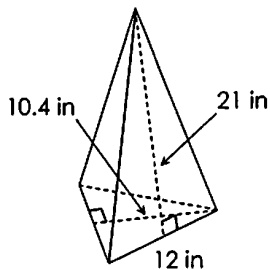
9.



$$SA = 84.7 + 3(152.6)$$

$$= 542.5 \text{ mi}^2$$

10. The winner of a bowling tournament will receive a trophy in the shape of a triangular pyramid with the dimensions given below. What is the minimum amount of paper needed to wrap the trophy?

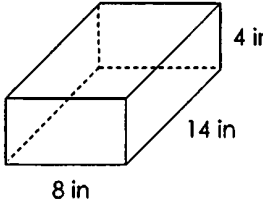
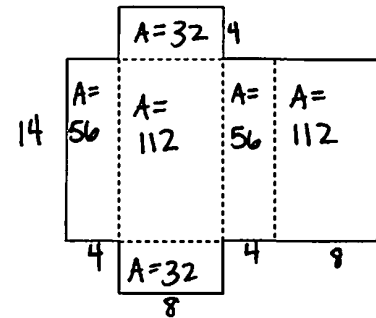
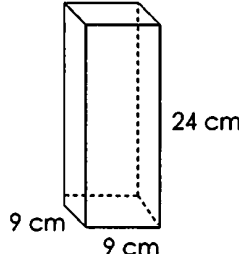
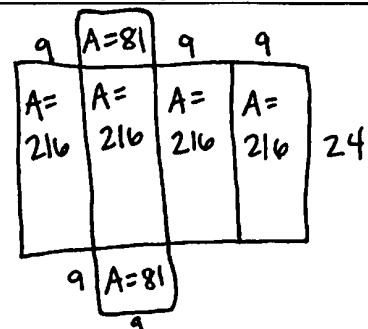
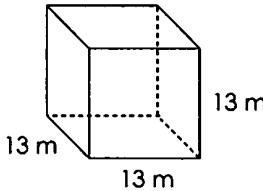
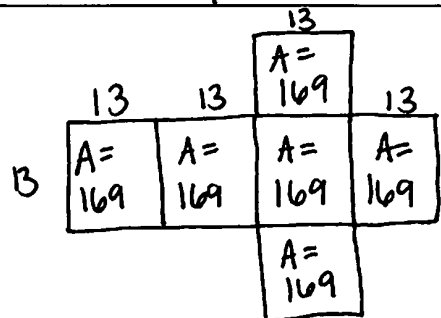
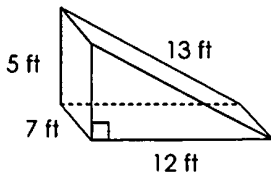
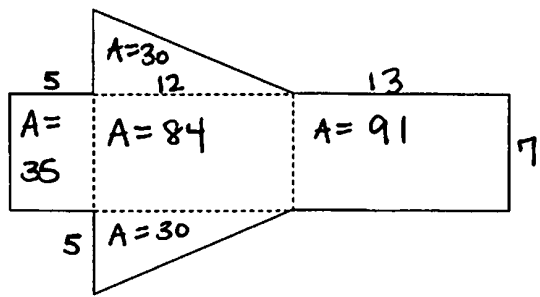
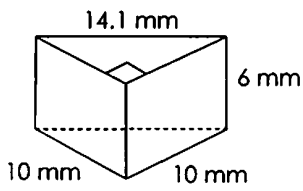
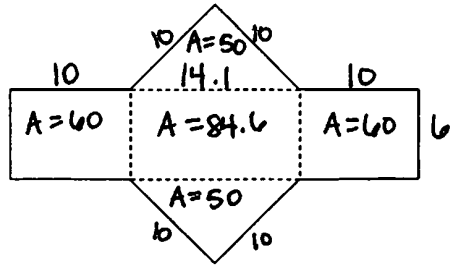


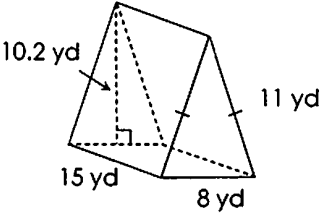
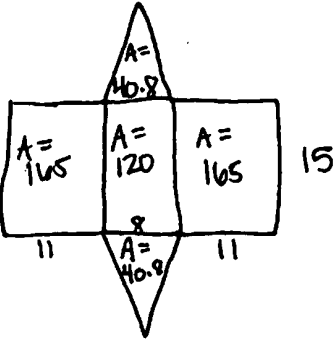
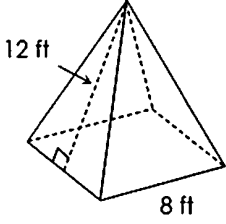
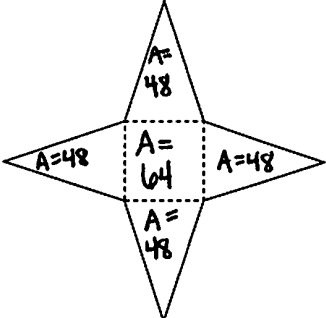
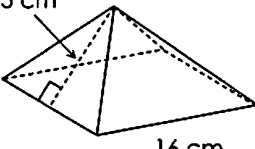
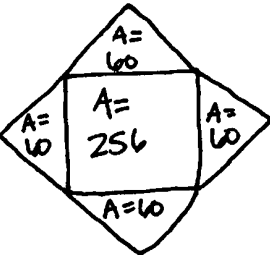
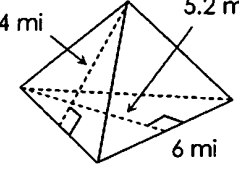
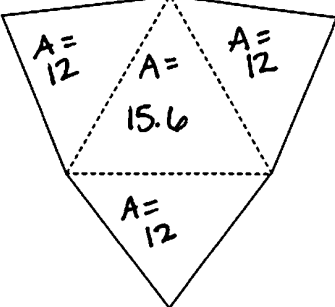
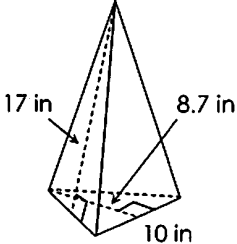
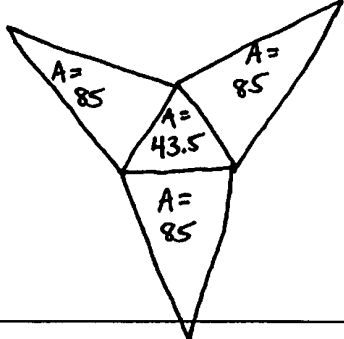
$$SA = 62.4 + 3(126)$$

$$= 440.4 \text{ in}^2$$

● ● ● SURFACE AREA REVIEW ● ● ●

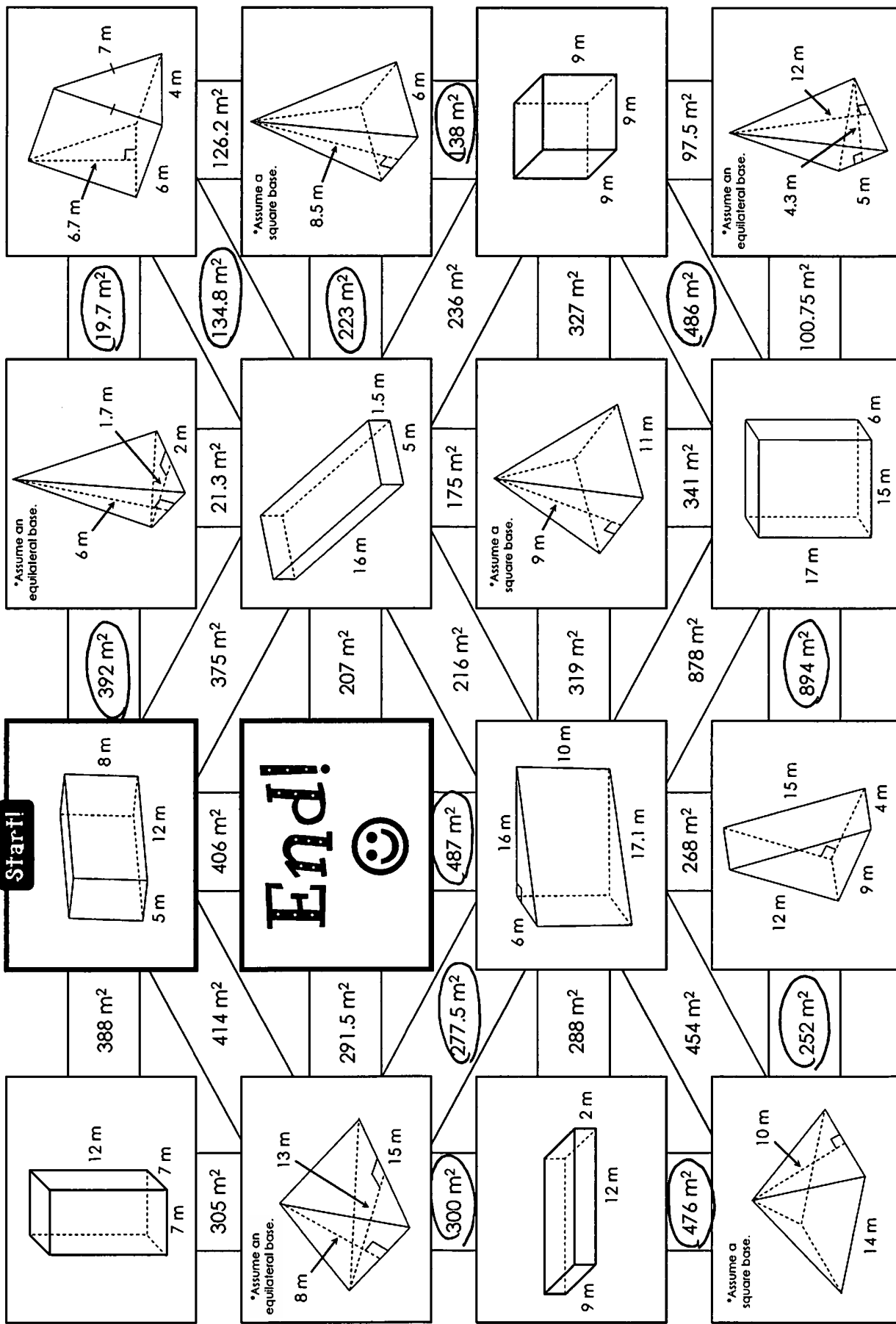
Directions: Find the surface area of each prism or pyramid. Draw a net where one is not provided.

PRISM	NET	SURFACE AREA
<p>1</p> 		$SA = 56 + 32 + 112 + 32 + 56 + 112$ $= 400 \text{ in}^2$
<p>2</p> 		$SA = 216 + 216 + 81 + 81 + 216 + 216$ $= 1026 \text{ cm}^2$
<p>3</p> 		$SA = 6(169)$ $= 1014 \text{ m}^2$
<p>4</p> 		$SA = 35 + 30 + 84 + 30 + 91$ $= 270 \text{ ft}^2$
<p>5</p> 		$SA = 60 + 50 + 84.6 + 50 + 60$ $= 304.6 \text{ mm}^2$

6	PRISM	NET	SURFACE AREA
			$SA = 165 + 40.8$ $+ 120 + 40.8$ $+ 165$ $= 531.6 \text{ yd}^2$
7	 <p>(Assume a square base.)</p>		$SA = 64 + 4(48)$ $= 256 \text{ ft}^2$
8	 <p>(Assume a square base.)</p>		$SA = 256 +$ $4(60)$ $= 496 \text{ cm}^2$
9	 <p>(Assume an equilateral base.)</p>		$SA = 15.6 +$ $3(12)$ $= 51.6 \text{ mi}^2$
10	 <p>(Assume an equilateral base.)</p>		$SA = 43.5 +$ $3(85)$ $= 298.5 \text{ in}^2$

Surface Area of Prisms & Pyramids Maze!

Directions: Find the surface area of each prism or pyramid. Use your solutions to navigate through the maze. Draw nets and show your work on a separate sheet of paper.



Name: _____

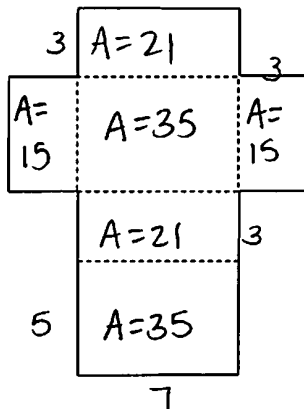
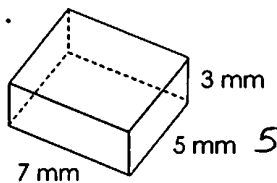
Unit 7: Measurement & Geometry

Date: _____ Per: _____

Homework 13: Surface Area Review

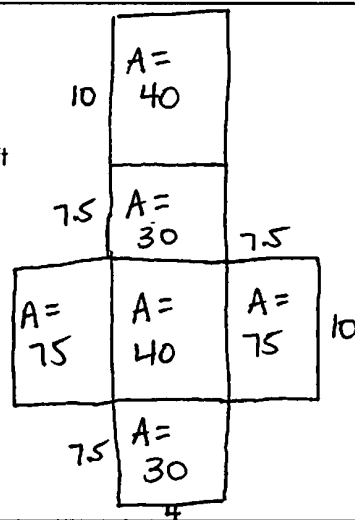
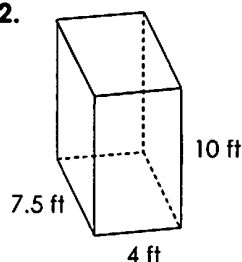
**** This is a 2-page document! ******Directions:** Find the surface area of each figure. Draw nets where they are not provided.

1.



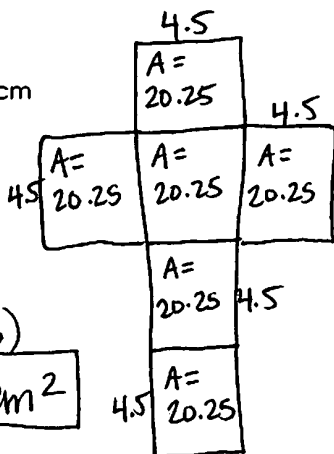
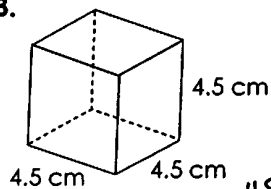
$$\begin{aligned}
 SA &= 21 + 15 \\
 &\quad + 35 + 15 \\
 &\quad + 21 + 35 \\
 &= 142 \text{ mm}^2
 \end{aligned}$$

2.



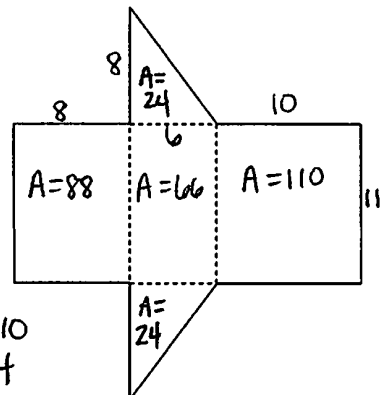
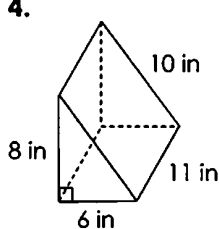
$$\begin{aligned}
 SA &= 40 + 30 \\
 &\quad + 75 + 40 \\
 &\quad + 75 + 30 \\
 &= 290 \text{ ft}^2
 \end{aligned}$$

3.



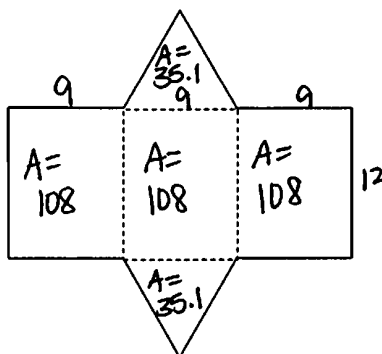
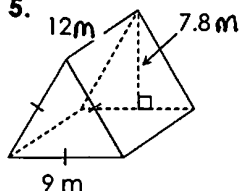
$$\begin{aligned}
 SA &= 6(20.25) \\
 &= 121.5 \text{ cm}^2
 \end{aligned}$$

4.



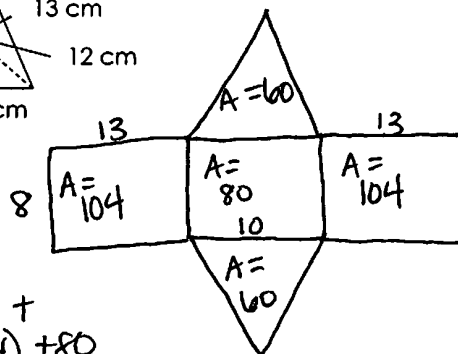
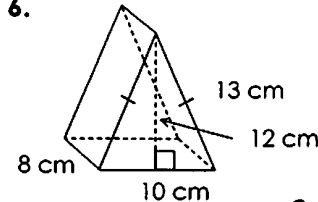
$$\begin{aligned}
 SA &= 88 + 66 + 110 \\
 &\quad + 24 + 24 \\
 &= 312 \text{ in}^2
 \end{aligned}$$

5.



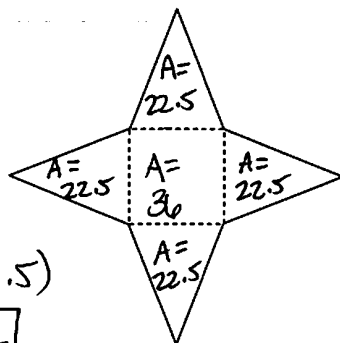
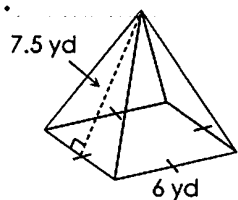
$$\begin{aligned}
 SA &= 3(108) + 2(35.1) \\
 &= 394.2 \text{ m}^2
 \end{aligned}$$

6.



$$\begin{aligned}
 SA &= 2(60) + 2(104) + 80 \\
 &= 408 \text{ cm}^2
 \end{aligned}$$

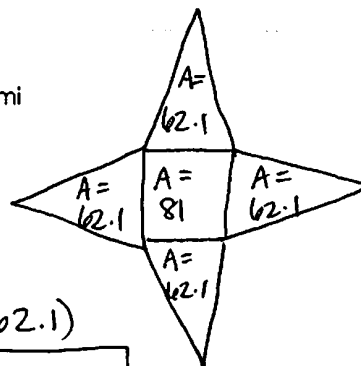
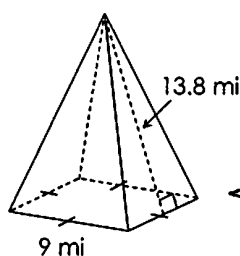
7.



$$SA = 36 + 4(22.5)$$

$$= 126 \text{ yd}^2$$

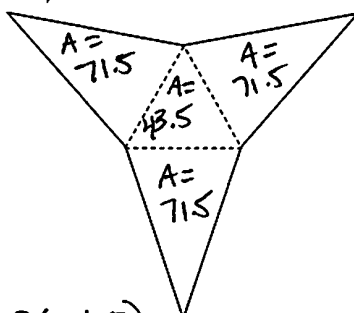
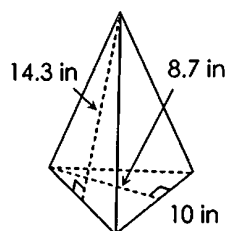
8.



$$SA = 81 + 4(62.1)$$

$$= 329.4 \text{ mi}^2$$

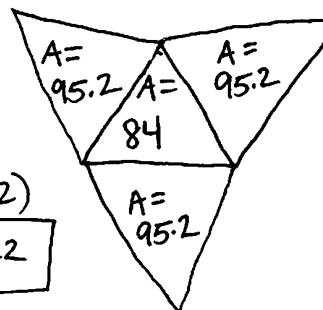
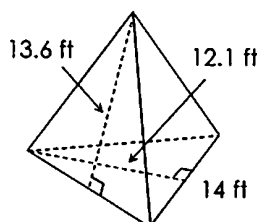
9. (assume an equilateral base)



$$SA = 43.5 + 3(71.5)$$

$$= 258 \text{ in}^2$$

10. (assume an equilateral base)



$$SA = 84 + 3(95.2)$$

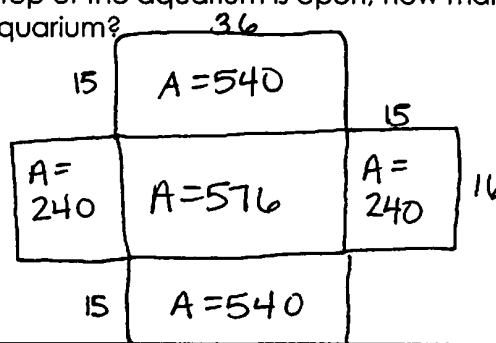
$$= 369.6 \text{ ft}^2$$

11. A glass aquarium in the shape of a rectangular prism has a height of 15 inches and a base measuring 36 inches by 16 inches. Assuming the top of the aquarium is open, how many square inches of glass were used to create the aquarium?

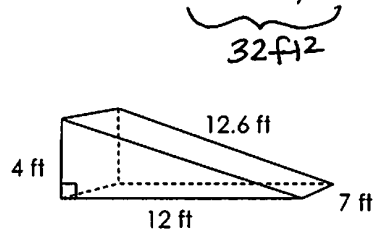
$$SA = 540 + 240 + 576$$

$$+ 240 + 540$$

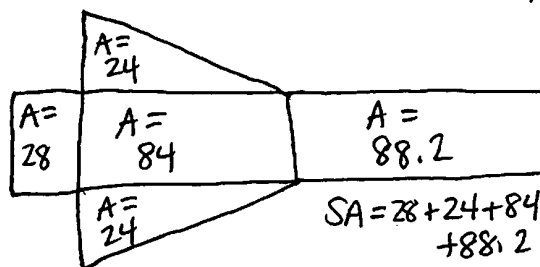
$$= 2136 \text{ in}^2$$



12. Gary is making a ramp with the dimensions shown below using sheets of plywood. If the sheets are 4 feet by 8 feet, what is the minimum number of sheets he will need to buy?



$$\frac{248.2}{32} = 7.76$$



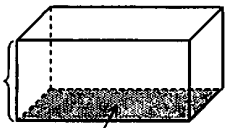
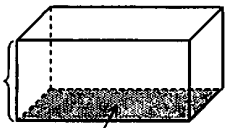
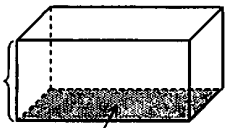
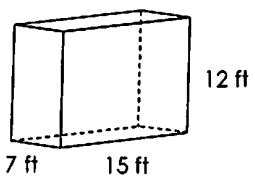
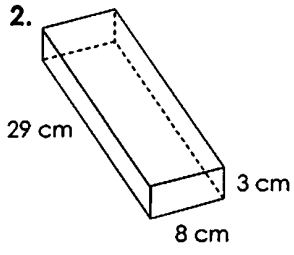
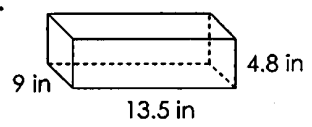
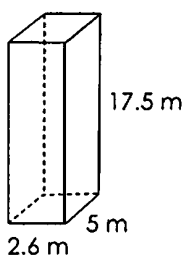
$$SA = 28 + 24 + 84 + 24$$

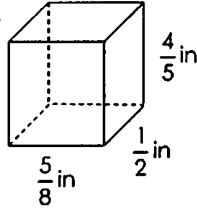
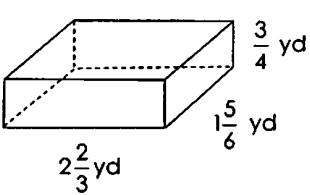
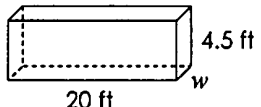
$$+ 88.2$$

$$= 248.2 \text{ ft}^2$$

8 sheets of plywood

Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples		
VOLUME	Volume is the amount of space that a 3-dimensional figure takes up.		
VOLUME of a Rectangular Prism	<p>The volume of a prism is the <u>product</u> of the <u>area</u> of the <u>base</u> and the <u>height</u> of the prism.</p> <table border="1"> <tr> <td> Volume of a Rectangular Prism $V = B \cdot h$ (or $V = l \cdot w \cdot h$) </td><td>  <p>height, h</p> <p>area of base, B</p> </td></tr> </table>	Volume of a Rectangular Prism $V = B \cdot h$ (or $V = l \cdot w \cdot h$)	 <p>height, h</p> <p>area of base, B</p>
Volume of a Rectangular Prism $V = B \cdot h$ (or $V = l \cdot w \cdot h$)	 <p>height, h</p> <p>area of base, B</p>		
EXAMPLES	<p>Find the volume of each rectangular prism.</p> <div> <p>1.</p>  <p>7 ft 15 ft 12 ft</p> <p>$B = 7(15) = 105$</p> <p>$V = 105(12)$</p> <p>$= 1260 \text{ ft}^3$</p> </div> <div> <p>2.</p>  <p>29 cm 8 cm 3 cm</p> <p>$B = 29(8) = 232$</p> <p>$V = 232(3)$</p> <p>$= 696 \text{ cm}^3$</p> </div> <div> <p>3.</p>  <p>9 in 13.5 in 4.8 in</p> <p>$V = (9)(13.5)(4.8)$</p> <p>$= 583.2 \text{ in}^3$</p> </div> <div> <p>4.</p>  <p>2.6 m 5 m 17.5 m</p> <p>$V = (2.6)(5)(17.5)$</p> <p>$= 227.5 \text{ m}^3$</p> </div>		

	<p>5. </p> $V = \left(\frac{5}{8}\right)\left(\frac{1}{2}\right)\left(\frac{4}{5}\right)$ $= \frac{20}{80}$ <div style="border: 1px solid black; padding: 5px; display: inline-block;"> $= \frac{1}{4} \text{ in}^3$ </div>	<p>6. </p> $V = \left(2\frac{2}{3}\right)\left(1\frac{5}{6}\right)\left(\frac{3}{4}\right)$ $= \left(\frac{8}{3}\right)\left(\frac{11}{6}\right)\left(\frac{3}{4}\right)$ $= \frac{264}{72}$ $= \frac{11}{3} = 3\frac{2}{3} \text{ yd}^3$ <div style="border: 1px solid black; padding: 5px; display: inline-block; margin-left: 20px;"> $= 3\frac{2}{3} \text{ yd}^3$ </div>
<p style="text-align: center;">FINDING a Missing Dimension</p>	<p>7. A rectangular prism has a length of 12 inches and a width of 7 inches. If the volume of the prism is 1,512 cubic inches, find the height of the prism.</p> $V = l \cdot w \cdot h$ $1512 = 12(7) \cdot h$ $\frac{1512}{84} = \frac{84 \cdot h}{84}$ <div style="border: 1px solid black; padding: 5px; display: inline-block;"> $h = 18 \text{ in}$ </div>	<p>8. If the volume of the prism below is 855 cubic feet, find w.</p>  $V = l \cdot w \cdot h$ $855 = 20 \cdot w \cdot 4.5$ $\frac{855}{90} = \frac{90w}{90}$ <div style="border: 1px solid black; padding: 5px; display: inline-block;"> $9.5 \text{ ft} = w$ </div>
<p style="text-align: center;">APPLICATIONS</p>	<p>9. Elijah is pouring sand into a glass cube with a side length measuring 2.5 inches. How many cubic inches of sand can she fit into the cube?</p> $V = l \cdot w \cdot h$ $= (2.5)(2.5)(2.5)$ <div style="border: 1px solid black; padding: 5px; display: inline-block;"> $= 15.625 \text{ in}^3$ </div> <p>10. A dump truck has a rectangular bed full with soil. If the bed measures 16 feet by 8 feet by 4.5 feet and the soil weighs 75 pounds per cubic foot, find the weight of the soil.</p> <div style="display: flex; justify-content: space-between;"> <div> $V = (16)(8)(4.5)$ $= 576 \text{ ft}^3$ </div> <div> $\text{Weight} = 75(576)$ <div style="border: 1px solid black; padding: 5px; display: inline-block;"> $= 43,200 \text{ pounds}$ </div> </div> </div>	

Name: _____

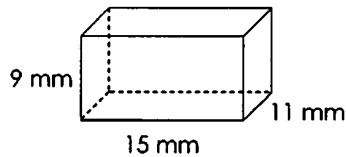
Unit 7: Measurement & Geometry

Date: _____ Per: _____

Homework 14: Volume of Rectangular Prisms

Directions: Find the volume of each prism.

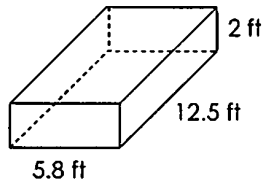
1.



$$V = 9(15)(11)$$

$$= 1485 \text{ mm}^3$$

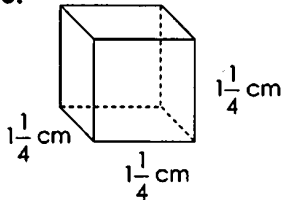
2.



$$V = 5.8(12.5)(2)$$

$$= 145 \text{ ft}^3$$

3.

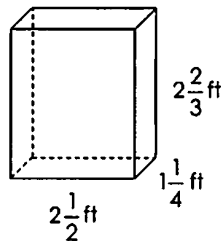


$$V = (1\frac{1}{4})(1\frac{1}{4})(1\frac{1}{4})$$

$$= (\frac{5}{4})(\frac{5}{4})(\frac{5}{4})$$

$$= \frac{125}{64} = 1\frac{61}{64} \text{ cm}^3$$

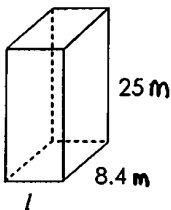
4.



$$V = 2\frac{1}{2}(1\frac{1}{4})(2\frac{2}{3})$$

$$= \frac{5}{2}(\frac{5}{4})(\frac{8}{3})$$

$$= \frac{200}{24} = \frac{25}{3} = 8\frac{1}{3} \text{ ft}^3$$

5. If the volume of the rectangular prism below is 735 cubic meters, find l .

$$V = l \cdot w \cdot h$$

$$735 = l(8.4)(25)$$

$$735 = l \cdot 210$$

$$3.5 \text{ m} = l$$

6. A fish tank measures 19.5 inches long by 12 inches wide by 15 inches tall. The tank is filled with water to a point 2 inches from the top of the tank. How much water is in the tank?

$$h = 15 - 2$$

$$= 13 \text{ in}$$

$$V = 19.5(12)(13)$$

$$= 3042 \text{ in}^3$$

Name: _____

Math 6

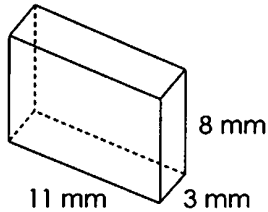
Date: _____ Per: _____

Unit 7: Measurement & Geometry

Quiz 7-3: Surface Area and Volume

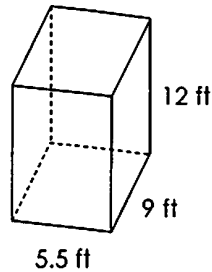
For questions 1-8: Using the nets on the separate sheet of paper, find the surface area of each figure. Draw nets where they are not provided.

1.



$$\begin{aligned} SA &= 24 + 33 + 88 \\ &\quad + 33 + 24 + 88 \\ &= 290 \end{aligned}$$

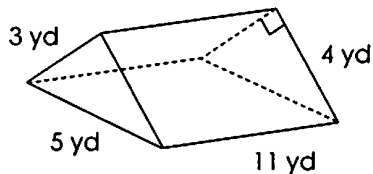
2.



$$\begin{aligned} SA &= 66 + 49.5 + 108 \\ &\quad + 49.5 + 66 + 108 \\ &= 447 \end{aligned}$$

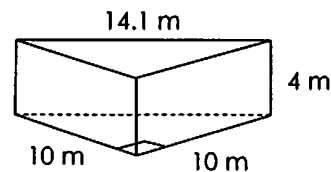
1. 290 mm²
2. 447 ft²
3. 144 yd²
4. 236.4 m²
5. 74.4 cm²
6. 600 in²

3.



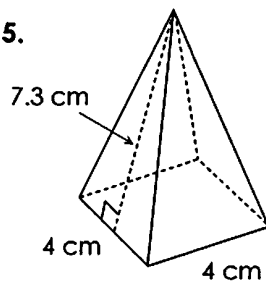
$$\begin{aligned} SA &= 6 + 44 + 33 + 55 + 6 \\ &= 144 \end{aligned}$$

4.



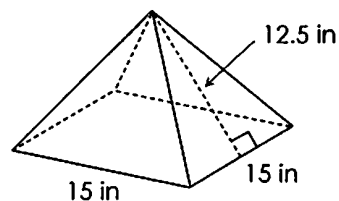
$$\begin{aligned} SA &= 40 + 40 + 50 + 56.4 + 50 \\ &= 236.4 \end{aligned}$$

5.



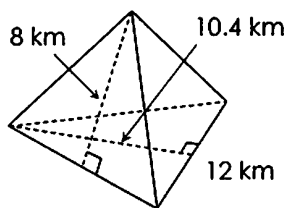
$$\begin{aligned} SA &= 16 + 4(14.6) \\ &= 74.4 \end{aligned}$$

6.



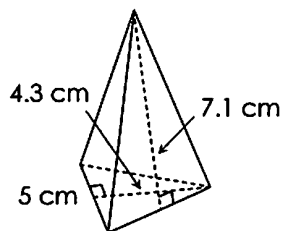
$$\begin{aligned} SA &= 225 + 4(93.75) \\ &= 600 \end{aligned}$$

7. (Assume an equilateral base.)



$$SA = 62.4 + 3(48) = 206.4$$

8. (Assume an equilateral base.)



$$SA = 10.75 + 3(17.75) = 64$$

7. 206.4 km²

8. 64 cm²

9. 567 in³

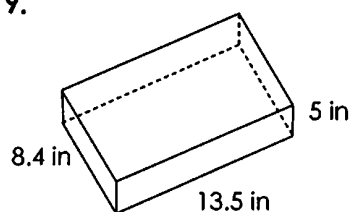
10. 73½ m³

11. 343.2 ft²

12. 123.75 ft³

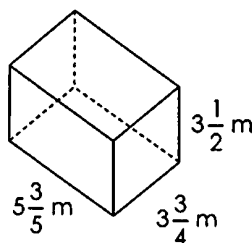
For questions 9-10: Find the volume of each rectangular prism.

9.



$$V = 8.4(13.5)(5) = 567$$

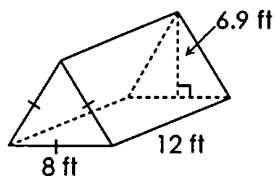
10.



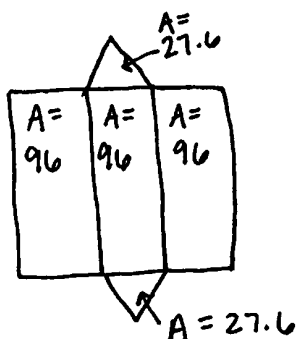
$$V = \left(5\frac{3}{5}\right)\left(3\frac{3}{4}\right)\left(3\frac{1}{2}\right) = \left(\frac{28}{5}\right)\left(\frac{15}{4}\right)\left(\frac{7}{2}\right) = \frac{2940}{40} = \frac{147}{2} = 73\frac{1}{2}$$

For questions 11-12: Read and solve each problem.

11. A tent in the shape of a triangular prism has the dimensions given below. What is the minimum amount of fabric needed to make the tent. (Assume this includes the floor.)



$$SA = 3(96) + 2(27.6) = 343.2$$



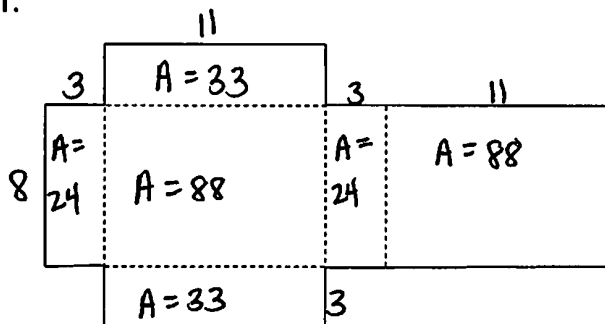
12. A sandbox in the shape of a rectangular prism measures 11 feet by 7.5 feet by 1.5 feet. Find the maximum amount of sand the box can hold.

$$V = 11(7.5)(1.5) = 123.75$$

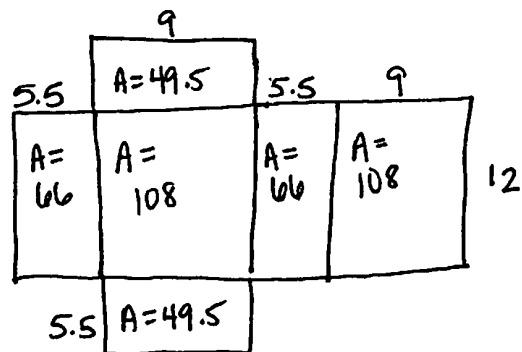
Name: _____ Date: _____ Per: _____

Nets for Quiz 7-3

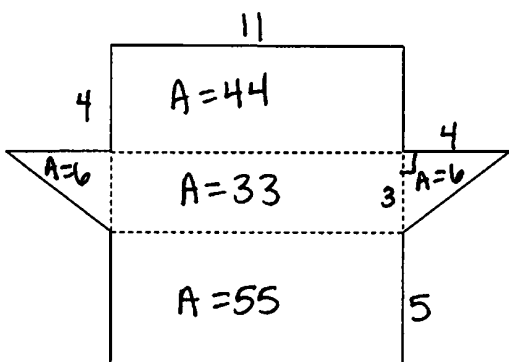
1.



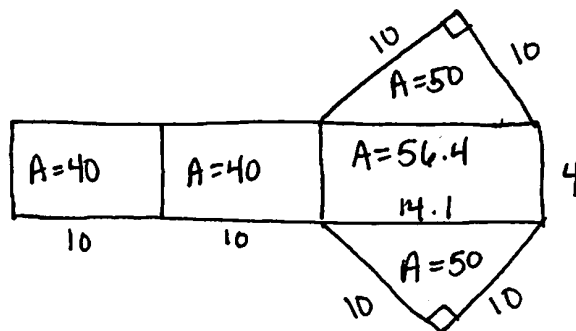
2.



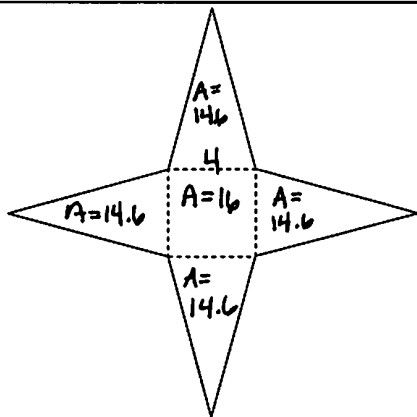
3.



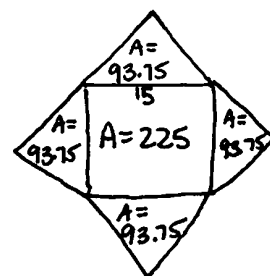
4.



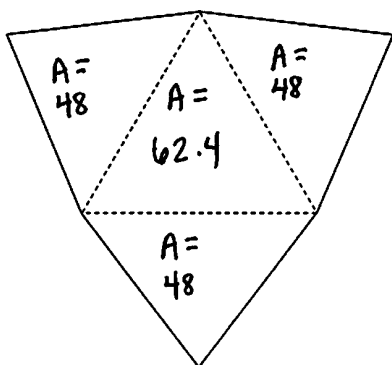
5.



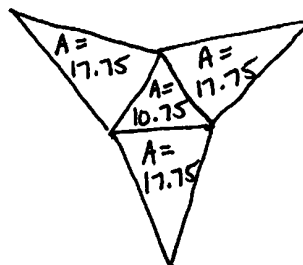
6.



7.



8.



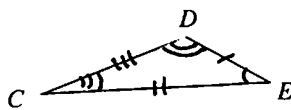
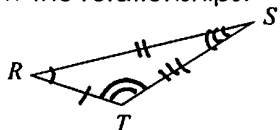
Unit 7 Test Study Guide (Measurement & Geometry)

Name: _____

Date: _____ Per: _____

Topic 1: Congruent Segments, Angles, and Polygons

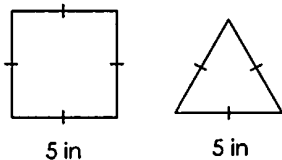
1. If the figures below are congruent, list all congruent sides and angles and place markings on the figures to show the relationships.



Sides	Angles
$\overline{TR} \cong \overline{DE}$ $\overline{RS} \cong \overline{EC}$ $\overline{TS} \cong \overline{DC}$	$\angle T \cong \angle D$ $\angle R \cong \angle E$ $\angle S \cong \angle C$

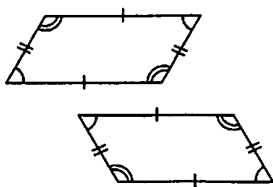
Determine whether the figures are congruent.

2.



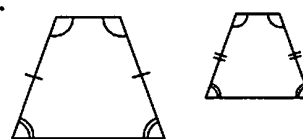
No

3.



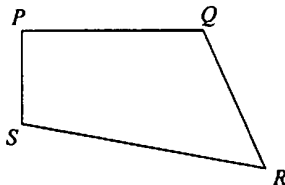
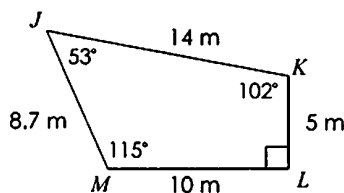
Yes

4.



No

5. The figures below are congruent. Use the figures below to answer each part.



a) What side corresponds to \overline{JM} ? \overline{RQ}

b) What is the length of \overline{PQ} ? 10m

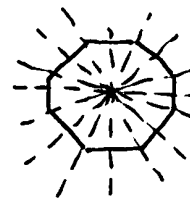
c) What angle corresponds to $\angle P$? $\angle L$

d) What is the measure of $\angle S$? 102°

6. What conclusions can you make about the sides, angles, and lines of symmetry in a regular polygon? Draw a regular polygon as an example.

A regular polygon has congruent sides + congruent angles. Also, the number of lines of symmetry is equal to the number of sides.

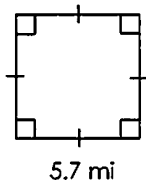
Example of a Regular Polygon



Topic 2: Perimeter and Area of Rectangles, Parallelograms, Triangles, and Trapezoids

Find the perimeter and area of each figure.

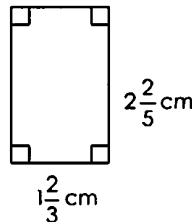
7.



$$P = 4(5.7) = 22.8 \text{ mi}$$

$$A = (5.7)^2 = 32.49 \text{ mi}^2$$

8.

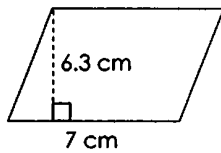


$$P = 2(1\frac{2}{3}) + 2(2\frac{2}{5}) = 3\frac{1}{3} + 4\frac{4}{5} = 8\frac{2}{15} \text{ cm}$$

$$A = 1\frac{2}{3}(2\frac{2}{5}) = \frac{5}{3}(\frac{12}{5}) = 4 \text{ cm}^2$$

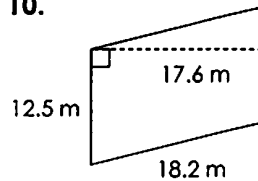
Find the area of each figure.

9.



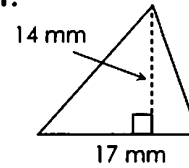
$$A = 7(6.3) \\ = 44.1 \text{ cm}^2$$

10.



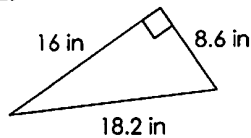
$$A = 12.5(17.6) \\ = 220 \text{ m}^2$$

11.



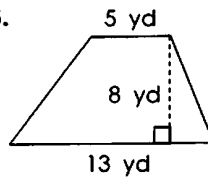
$$A = .5(17)(14) \\ A = 119 \text{ mm}^2$$

12.



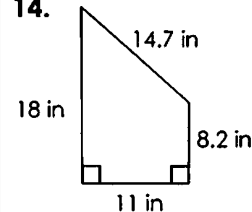
$$A = (.5)(16)(8.6) \\ = 68.8 \text{ in}^2$$

13.



$$A = \frac{1}{2}(8)(13+5) \\ = 4(18) \\ = 72 \text{ yd}^2$$

14.

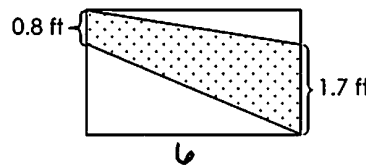


$$A = \frac{1}{2}(11)(18+8.2) \\ = 5.5(26.2) \\ = 144.1 \text{ in}^2$$

15. Find the length of a rectangle with a width of 7 inches and an area of 112 square inches.

$$A = l \cdot w \\ \frac{112}{7} = \frac{l \cdot 7}{7} \\ l = 16 \text{ in}$$

16. Elsa is sewing the rectangular flag below. If the flag is 6 feet by 2.5 feet, how much fabric will she need for the dotted section?

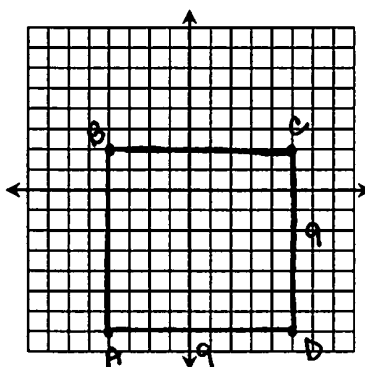


$$A = \frac{1}{2}(6)(1.7+0.8) \\ = 3(2.5) \\ = 7.5 \text{ ft}^2$$

Topic 3: Graphing Polygons in the Coordinate Plane

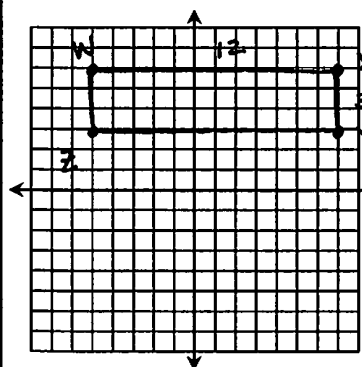
Graph the figure with the given vertices, then find its perimeter and area.

17. $A(-4, -7)$, $B(-4, 2)$, $C(5, 2)$, $D(5, -7)$



$$P = 4(9) \\ = 36 \\ A = 9^2 \\ = 81$$

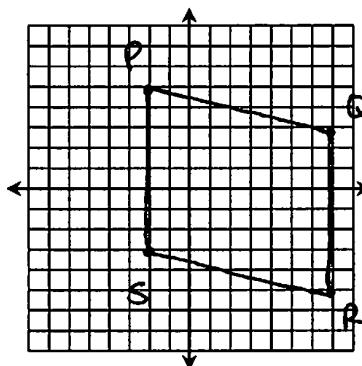
18. $W(-5, 6)$, $X(7, 6)$, $Y(7, 3)$, $Z(-5, 3)$



$$P = 2(12) + 2(3) \\ = 30 \\ A = 12(3) \\ = 36$$

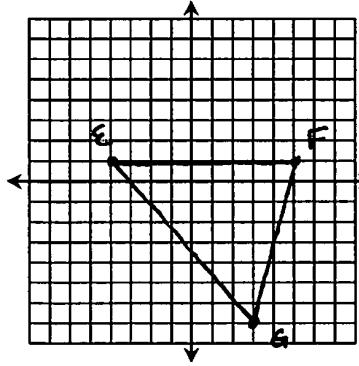
Graph the figure with the given vertices, then find its area.

19. $P(-2, 5)$, $Q(7, 3)$, $R(7, -5)$, $S(-2, -3)$



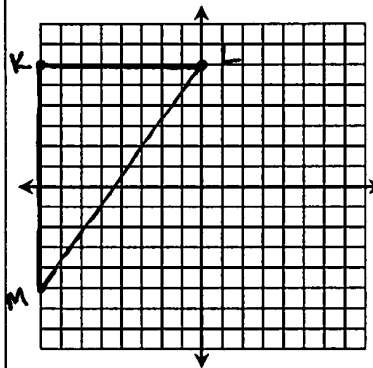
$$A = 8(9) \\ = 72$$

20. $E(-4, 1)$, $F(5, 1)$, $G(3, -7)$



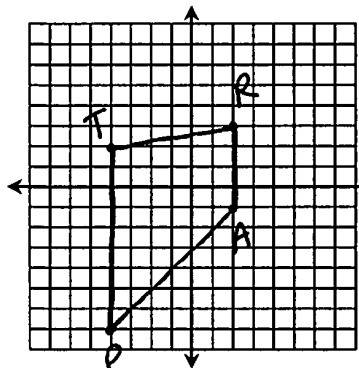
$$A = \frac{1}{2}(9)(8) \\ = 36$$

21. $K(-8, 6)$, $L(0, 6)$, $M(-8, -5)$



$$A = \frac{1}{2}(8)(11) \\ = 44$$

22. $T(-4, 2)$, $R(2, 3)$, $A(2, -1)$, $P(-4, -7)$

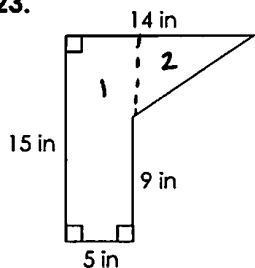


$$A = \frac{1}{2}(6)(4+9) \\ = 3(13) \\ = 39$$

Topic 4: Area of Composite Figures

Find the area of each figure.

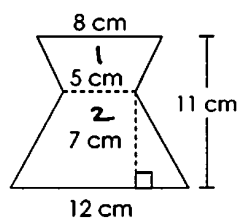
23.



$$A_1 = 15(5) = 75 \\ A_2 = \frac{1}{2}(14)(9) = 63$$

$$A = 75 + 63 \\ = 138 \text{ in}^2$$

24.

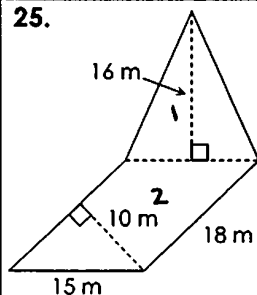


$$A_1 = \frac{1}{2}(4)(5+8) \\ = 2(13) \\ = 26$$

$$A_2 = \frac{1}{2}(7)(5+12) \\ = 3.5(17) \\ = 59.5$$

$$A = 26 + 59.5 = 85.5 \text{ cm}^2$$

25.

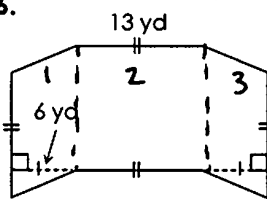


$$A_1 = \frac{1}{2}(15)(16) \\ = 120$$

$$A_2 = 10(18) \\ = 180$$

$$A = 120 + 180 \\ = 300 \text{ m}^2$$

26.

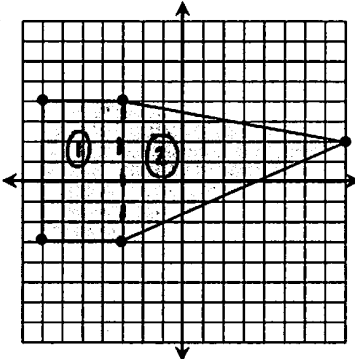
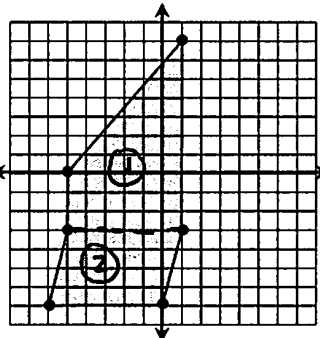


$$A_1 = 6(13) = 78$$

$$A_2 = 13^2 = 169$$

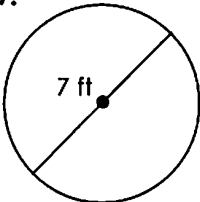
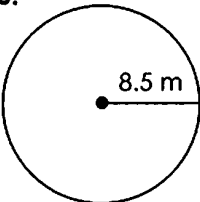
$$A_3 = 6(13) = 78$$

$$A = 78 + 169 + 78 \\ = 325 \text{ yd}^2$$

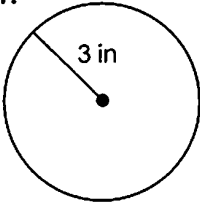
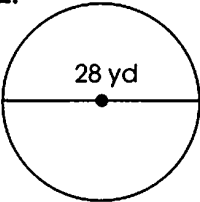
<p>27.</p>  $A_1 = 4(7) = 28$ $A_2 = \frac{1}{2}(7)(11) = 38.5$ $A = 28 + 38.5 = 66.5$	<p>28.</p>  $A_1 = \frac{1}{2}(6)(3+10) = 39$ $A_2 = 6(4) = 24$ $A = 39 + 24 = 63$
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Topic 5: Circumference and Area of Circles

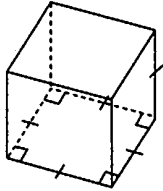
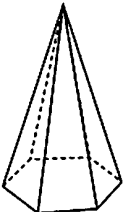
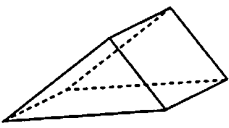
Find the circumference of each circle. Use 3.14 for pi.

<p>29.</p>  $C = 2\pi 3.5 = 7(3.14) = 21.98 \text{ ft}$	<p>30.</p>  $C = 2\pi 8.5 = 17(3.14) = 53.38 \text{ m}$
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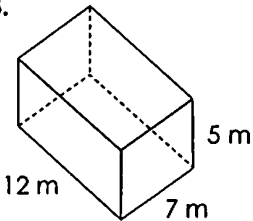
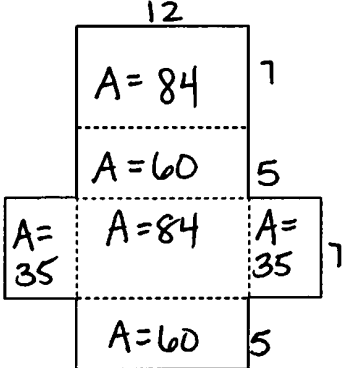
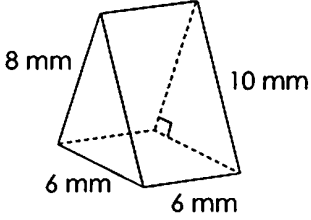
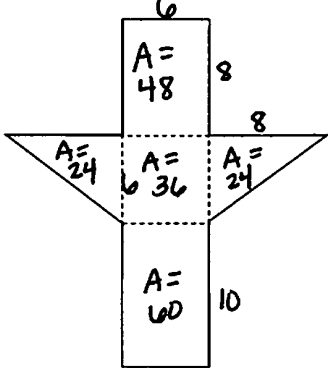
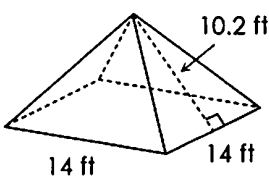
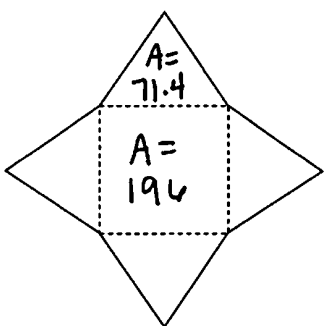
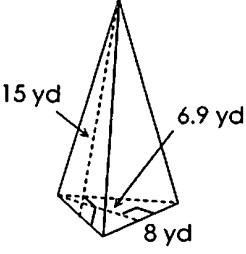
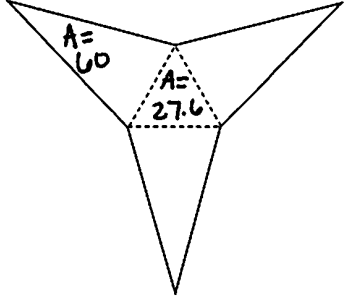
Find the area of each circle. Use 3.14 for pi.

<p>31.</p>  $A = \pi (3)^2 = 9(3.14) = 28.26 \text{ in}^2$	<p>32.</p>  $A = \pi (14)^2 = 196(3.14) = 615.44 \text{ yd}^2$
<p>33. Ben is riding a horse on a carousel located 5.5 feet from its center. If the ride makes 8 full revolutions before stopping, how many feet will Ben travel?</p> $C = 2\pi 5.5 = 11(3.14) = 34.54$ $8(34.54) = 276.32 \text{ ft}$	<p>34. A pizzeria will deliver up to a 9-mile radius. Find the area in which the pizzeria deliver.</p> $A = \pi (9)^2 = 81(3.14) = 254.34 \text{ mi}^2$

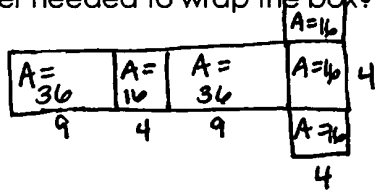
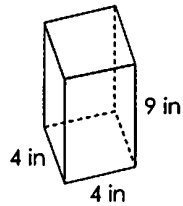
Topic 6: Classifying Three-Dimensional Figures

Find the number of faces, edges, and vertices of each solid. Then classify the figure.					
35.		Faces: 6 Edges: 12 Vertices: 8	36.		Faces: 7 Edges: 12 Vertices: 7
37.		Faces: 5 Edges: 9 Vertices: 6	Classify:		
Classify:		Square prism		Hexagonal Pyramid	
Classify:		Triangular Prism			

Topic 7: Surface Area of Prisms and Pyramids

Find the surface area of each figure.	
38.	39.
  $SA = 84 + 60 + 35 + 84 + 35 + 60$ $= 358 \text{ m}^2$	  $SA = 48 + 24 + 36 + 24 + 60$ $= 192 \text{ mm}^2$
40.	41. Assume an equilateral base.
  $SA = 196 + 4(71.4)$ $= 481.6 \text{ ft}^2$	  $SA = 27.6 + 3(60)$ $= 207.6 \text{ yd}^2$

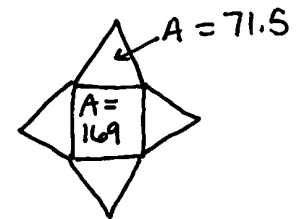
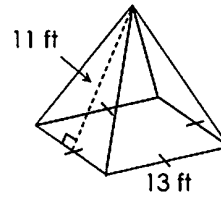
42. Isaac bought his mother a vase for her birthday. He placed the vase in a cardboard box with the dimensions given below. What is the minimum amount of wrapping paper needed to wrap the box?



$$SA = 2(36) + 4(16)$$

$$= 136 \text{ in}^2$$

43. Ava would like to cover her tent with a tarp for additional protection during a storm. If the tent has the dimensions given below, find the minimum size needed for the tarp.



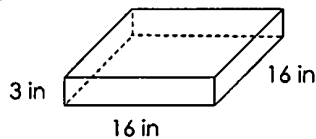
$$SA = 169 + 4(71.5)$$

$$= 455 \text{ ft}^2$$

Topic 8: Volume of Rectangular Prisms

Find the volume of each rectangular prism.

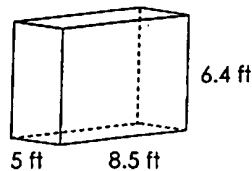
44.



$$V = 3(16)(16)$$

$$= 768 \text{ in}^3$$

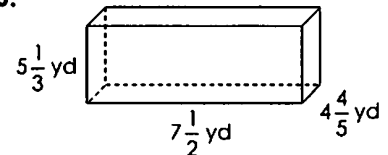
45.



$$V = 5(8.5)(6.4)$$

$$= 272 \text{ ft}^3$$

46.



$$V = 5\frac{1}{3}(7\frac{1}{2})(4\frac{4}{5})$$

$$= \frac{16}{3}(\frac{15}{2})(\frac{24}{5})$$

$$= \frac{5760}{30}$$

$$= 192 \text{ yd}^3$$

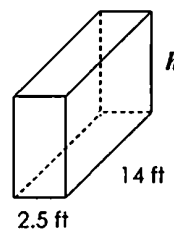
47. A juice box measures 6.5 centimeters by 4 centimeters by 10.5 cm. If the box is 20% full, how much juice is in the box?

$$V = 6.5(4)(10.5)$$

$$= 273 \text{ cm}^3$$

$$273(.2) = 54.6 \text{ cm}^3$$

48. The volume of a rectangular prism below is 315 cubic feet. Find the missing dimension.



$$V = l \cdot w \cdot h$$

$$315 = 2.5(14) \cdot h$$

$$\frac{315}{35} = \frac{35h}{35}$$

$$h = 9 \text{ ft}$$

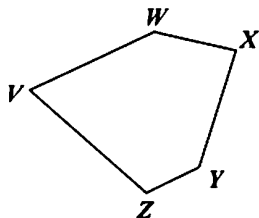
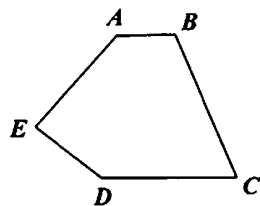
Name: _____

Date: _____ Per: _____

Unit 7 Test

Measurement & Geometry

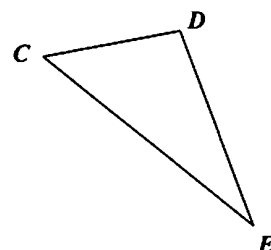
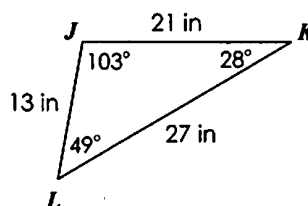
1. The figures below are congruent. Which line segment must be congruent to \overline{BC} ?



- A. \overline{VW}
- B. \overline{XY}
- C. \overline{VZ}
- D. \overline{WX}

C

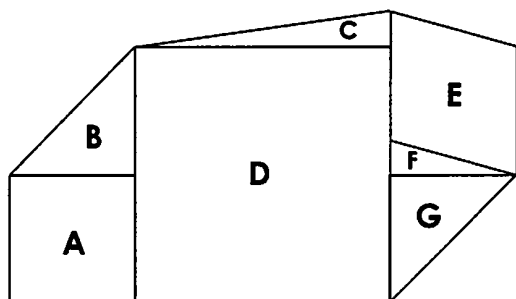
2. If the triangles below are congruent, which statement is true?



- A. The length of \overline{CD} is 21 inches.
- B. The length of \overline{DE} is 27 inches.
- C. The measure of $\angle C$ is 28° .
- D. The measure of $\angle E$ is 28° .

D

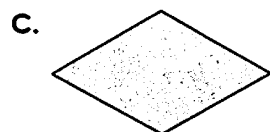
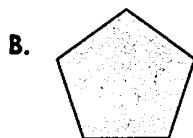
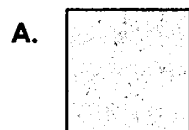
3. Which figures in the diagram below appear to be congruent?



- A. Figure A and Figure E
- B. Figure B and Figure G
- C. Figure A and Figure D
- D. Figure C and Figure F

B

4. Which figure is least likely to be a regular polygon?



C

5. Find the perimeter and area of a square with a side length of $2\frac{1}{2}$ centimeters.

$$P = 4(2.5) = 10$$

$$A = 2.5^2 = 6.25$$

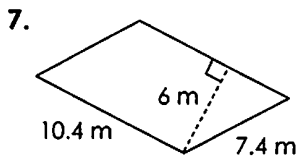
$P = 10 \text{ cm}$

$A = 6.25 \text{ cm}^2$

6. The area of a rectangle is 48 square feet. Check two measurements from those given below that could be the length and width of this rectangle.

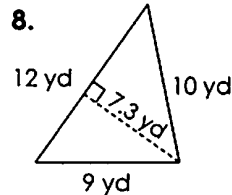
<input type="checkbox"/> 2 feet	<input checked="" type="checkbox"/> 3 feet	<input type="checkbox"/> 4 feet	<input type="checkbox"/> 8 feet	<input checked="" type="checkbox"/> 16 feet	<input type="checkbox"/> 20 feet
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Find the area of each figure.



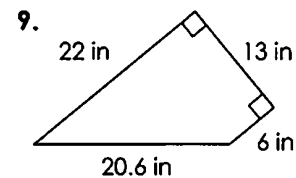
$$A = 6(10.4)$$

$$A = 62.4 \text{ m}^2$$



$$A = \frac{1}{2}(12)(7.3)$$

$$A = 43.8 \text{ yd}^2$$



$$A = \frac{1}{2}(13)(22) = 6.5(28)$$

$$A = 182 \text{ in}^2$$

10. A triangle with a height of 8 meters has an area of 72 square meters. What is the measure of the base of this triangle?

$$72 = \frac{1}{2} b \cdot 8$$

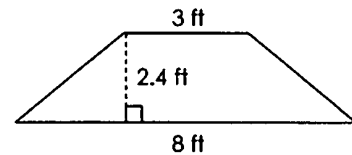
$$72 = 4b$$

$$18 = b$$

- A. 9 meters
B. 12 meters
C. 18 meters
D. 24 meters

C

11. The glass in a window with the dimensions given below needs to be replaced. Find the cost to replace the window if the glass costs \$15 per square foot.

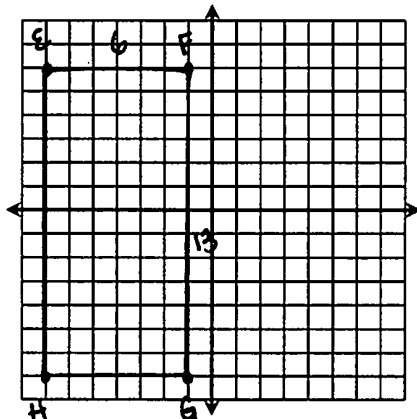


$$A = \frac{1}{2}(2.4)(3+8) = 1.2(11) = 13.2 \text{ ft}^2$$

- A. \$174
B. \$198
C. \$252
D. \$396

B

12. Graph the figure with the given vertices. Then give the perimeter and area of the figure.



$$E(-7, 6), F(-1, 6), G(-1, -7), H(-7, -7)$$

$$P = 2(6) + 2(13) = 38$$

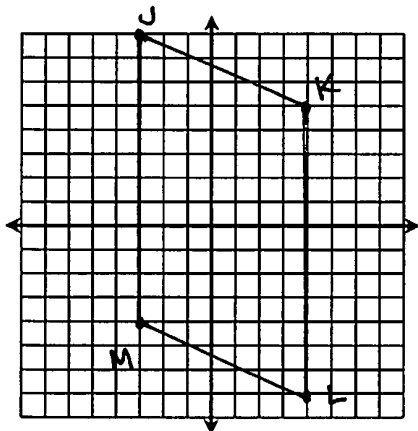
$$A = 6(13) = 78$$

$$P = 38$$

$$A = 78$$

Graph the figure with the given vertices, then find the area of the figure.

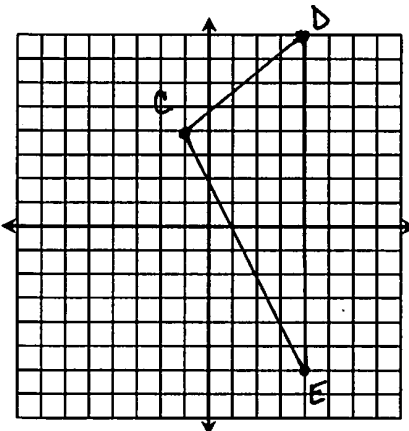
13. $J(-3, 8)$, $K(4, 5)$, $L(4, -7)$, $M(-3, -4)$



$$A = 12(7) = 84$$

$$A = 84$$

14. $C(-1, 4)$, $D(4, 8)$, $E(4, -6)$

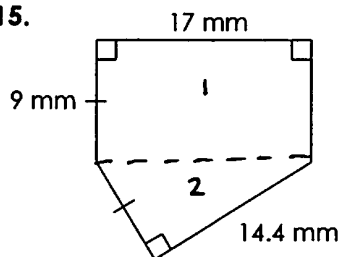


$$A = \frac{1}{2}(14)(5) = 35$$

$$A = 35$$

For questions 15-17, find the area of each figure.

15.



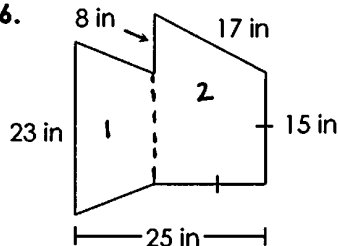
$$A_1 = 9(17) = 153$$

$$A_2 = \frac{1}{2}(9)(14.4) = 64.8$$

- A. 198.2 mm^2
- B. 217.8 mm^2
- C. 282.6 mm^2
- D. 306 mm^2

B

16.



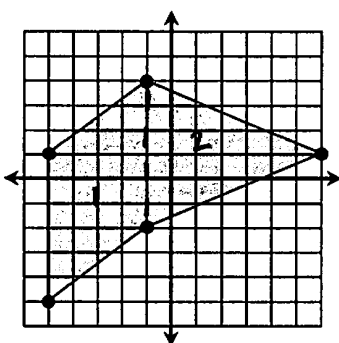
$$A_1 = \frac{1}{2}(10)(15+23) = 5(38) = 190$$

$$A_2 = \frac{1}{2}(15)(15+23) = 7.5(38) = 285$$

- A. 475 in^2
- B. 428 in^2
- C. 395 in^2
- D. 520 in^2

A

17.



* $\square = 1$ square foot

$$A_1 = 6(4) = 24$$

$$A_2 = \frac{1}{2}(6)(7) = 21$$

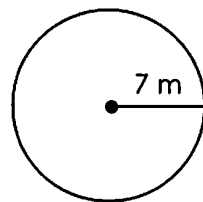
- A. 37 ft^2
- B. 42 ft^2
- C. 45 ft^2
- D. 48 ft^2

C

18. If the circumference of the circle below is 44 meters, which expression could represent an approximate value of π ?

$$44 = 2\pi r$$

$$\frac{44}{14} = \frac{14\pi}{14}$$



- A. $7 \div 44$
- B. $44 \div 7$
- C. $14 \div 44$
- D. $44 \div 14$

D

19. Which is closest to the circumference of a circle with a diameter of 8 yards?

$$r = 4$$

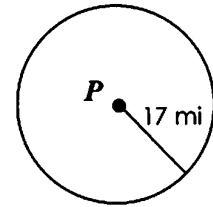
$$\begin{aligned} C &= 2\pi r \\ &= 8(3.14) \\ &= 25.12 \end{aligned}$$

- A. 25.12 yards
- B. 37.68 yards
- C. 12.56 yards
- D. 50.24 yards

A

20. If P is the center of the circle below, find the approximate area of the circle.

$$\begin{aligned} A &= \pi \cdot 17^2 \\ &= 289(3.14) \end{aligned}$$



- A. 53.38 mi²
- B. 106.76 mi²
- C. 907.46 mi²
- D. 4,534.16 mi²

C

21. A swimming pool has a diameter of 24 feet. What is the minimum amount of fabric needed to make a cover for the pool if the cover must hang off by 1 foot all around the pool?

$$r = 13$$

$$\begin{aligned} A &= \pi \cdot 13^2 \\ &= 169(3.14) \end{aligned}$$

- A. 78.5 ft²
- B. 81.64 ft²
- C. 490.63 ft²
- D. 530.66 ft²

D

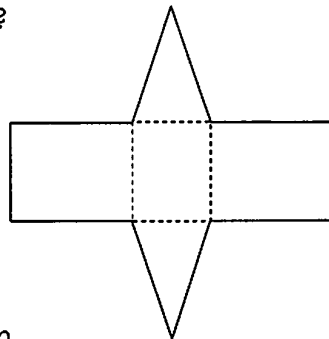
22. A wheel has a radius of 62.5 inches. Find the distance the wheel travels in one full revolution.

$$\begin{aligned} C &= 2\pi(62.5) \\ &= 125(3.14) \end{aligned}$$

- A. 196.25 inches
- B. 274.6 inches
- C. 318.8 inches
- D. 392.5 inches

D

23. If the figure below is folded along the dotted lines, which three-dimensional figure will it make?

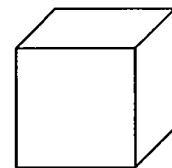


- A. Rectangular Prism
- B. Triangular Prism
- C. Rectangular Pyramid
- D. Triangular Pyramid

B

24. The edge length of a cube is shown below. What is the total surface area of the cube?

$$\begin{aligned} SA &= 6(5)^2 \\ &= 6(25) \end{aligned}$$

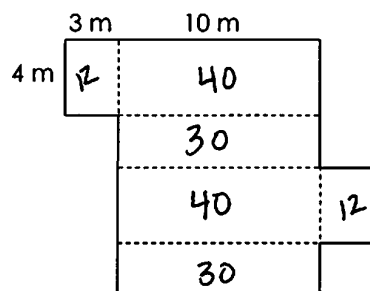


5 cm

- A. 25 cm²
- B. 30 cm²
- C. 125 cm²
- D. 150 cm²

D

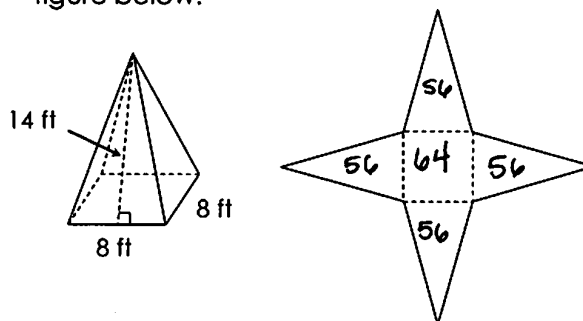
25. The net of a rectangular prism is shown below. Find the surface area of the prism.



- A. 152 m^2
B. 164 m^2
C. 178 m^2
D. 186 m^2

B

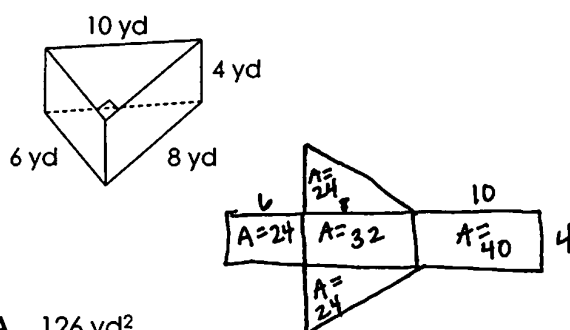
26. Use the net to find the surface area of the figure below.



- A. 264 ft^2
B. 288 ft^2
C. 302 ft^2
D. 316 ft^2

B

27. What is the total area of the figure below?

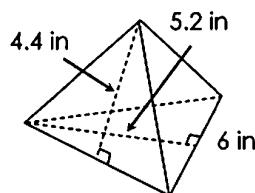


- A. 126 yd^2
B. 132 yd^2
C. 144 yd^2
D. 160 yd^2

C

28. Becca is using construction paper to make decorations in the shape below. If the base of the decoration is an equilateral triangle, what is the minimum amount of paper she need for each one?

$$\begin{aligned} \text{Base} &= \frac{1}{2}(6)(5.2) \\ &= 15.6 \\ \text{Side} &= \frac{1}{2}(6)(4.4) \\ &= 13.2 \end{aligned}$$

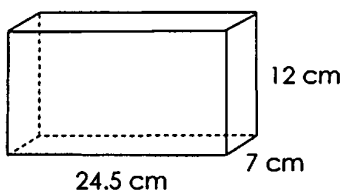


- A. 45.7 in^2
B. 48.6 in^2
C. 51.8 in^2
D. 55.2 in^2

D

29. What is the volume of the prism with the dimensions given below?

$$\begin{aligned} V &= 24.5(7)(12) \\ &= 2058 \end{aligned}$$

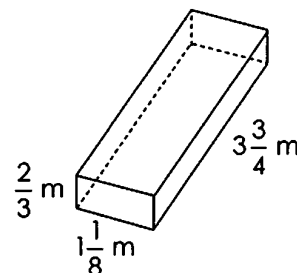


- A. $1,099 \text{ cm}^3$
B. $1,472 \text{ cm}^3$
C. $1,726 \text{ cm}^3$
D. $2,058 \text{ cm}^3$

D

30. What is the volume of the prism with the dimensions given below?

$$\begin{aligned} V &= \frac{2}{3}\left(1\frac{1}{8}\right)\left(3\frac{3}{4}\right) \\ &= \frac{2}{3}\left(\frac{9}{8}\right)\left(\frac{15}{4}\right) \end{aligned}$$



- A. $2\frac{13}{16} \text{ m}^3$
B. $2\frac{1}{4} \text{ m}^3$
C. $2\frac{7}{8} \text{ m}^3$
D. $2\frac{1}{2} \text{ m}^3$

A

CREDITS

I use clipart and
fonts in my products by:



Art with Jenny K



Many thanks to these
talented artists!