Grade 7 General
Term 3 Revision
2024-2025

Al Soqoor School

EoT3 Exam Coverage
Module 9 - 11
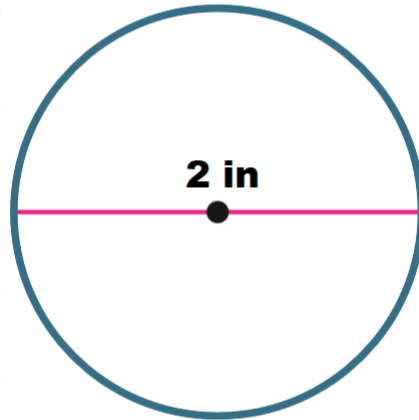## Mathematics/Reveal

Part (1)
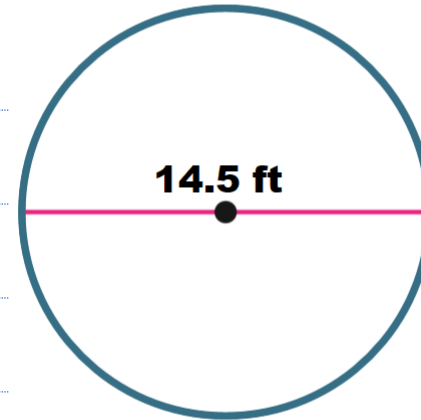## 15 questions (from 1-15)
Marks of MCQ 4

1. Find the circumference of the watch face. Use 3.14 for π. Round to the nearest hundredth if necessary.

2. A circular fence is being used to surround a dog house. How much fencing is needed to build the fence? Use 3.14 for π. Round to the nearest hundredth if necessary.

2 in

14.5 ft

3. Find the circumference of a circle with a radius of $31\frac{1}{2}$ yards. Use 3.14 for π. Write your answer as a decimal rounded to the nearest hundredth.

4. Find the circumference of a circle with a radius of 4.4 inches. Use 3.14 for π. Round to the nearest hundredth if necessary.

5. The world's largest flower, the Rafflesia, has a circumference of 286 centimeters. Find the approximate diameter of the flower. Use 3.14 for π. Round to the nearest hundredth if necessary.

6. A helicopter pad has a circumference of $47\frac{1}{2}$ yards. Find the approximate diameter of the helicopter pad. Use 3.14 for π. Write your answer as a decimal rounded to the nearest hundredth if necessary.
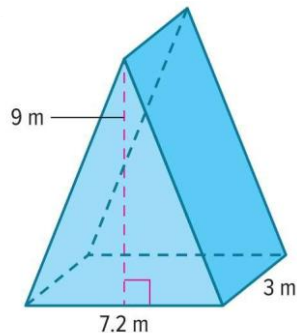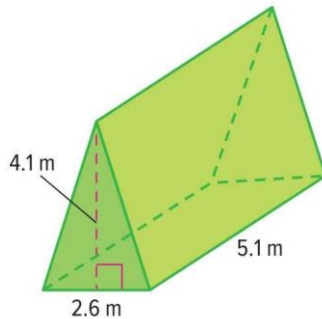
Find the volume of each figure. Round to the nearest tenth if necessary.

3.

9 m

3 m

7.2 m

4.

4.1 m

5.1 m

2.6 m

5.

2.4 m

1.4 m   1.8 m

6.

$4\frac{2}{3}$ yd

3 yd

$3\frac{1}{3}$ yd

Find the surface area of each prism. Round to the nearest tenth if necessary.

1.

6$\frac{2}{3}$ yd
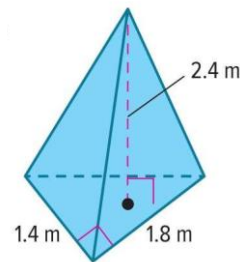
12 yd

8$\frac{1}{4}$ yd

2.

3.7 in.

6 in.
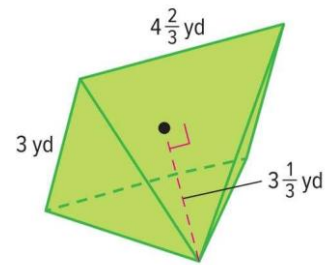
4.3 in.
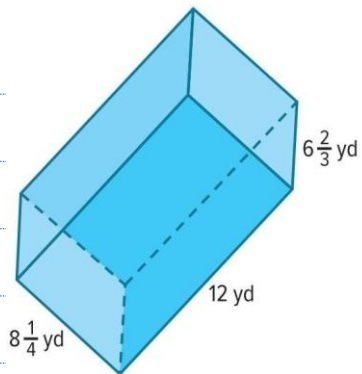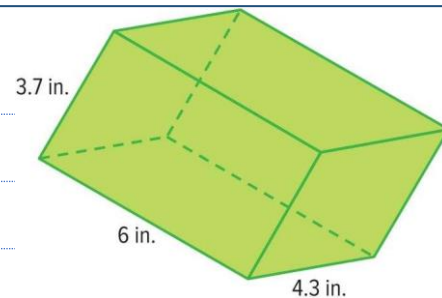
Find the surface area of each pyramid. Round to the nearest tenth if necessary.

5.

12.25 in.

15.75 in.

15.75 in.

6.

12.2 m

16 m

10.6 m

12.2 m

12.2 m
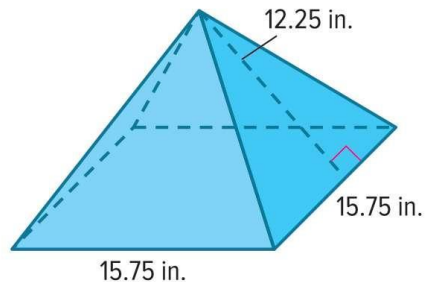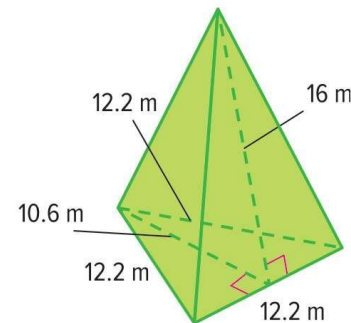
1. Mya's lunchbox is shown. What is the volume of the lunchbox? Round to the nearest tenth if necessary.

4.25 in.

4.25 in.

8 in.

10.6 in.
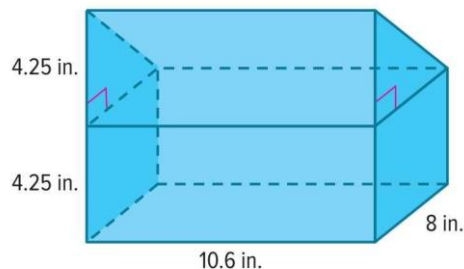
2. Anson's toy rocket is shown. What is the volume of the rocket? Round to the nearest tenth if necessary.

1.1 in.

1.1 in.

8.2 in.

2.1 in.

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3. What is the volume of the birdfeeder? Round to the nearest tenth if necessary.

2 in.

4 in.

1.5 in.

2 in.
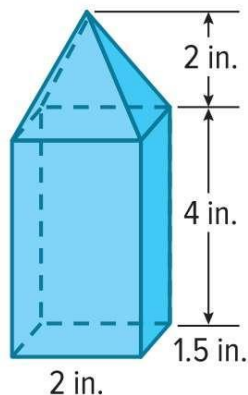
4. Zahir made this wooden perch for his pet bird. What is the volume of the bird perch? Round to the nearest tenth if necessary.
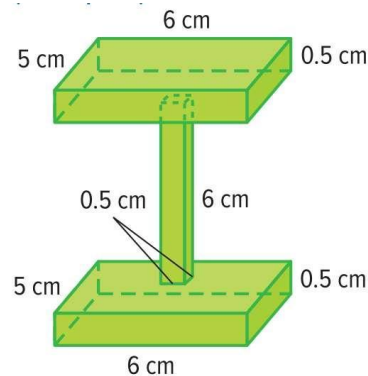
6 cm

5 cm

0.5 cm

0.5 cm

6 cm

5 cm

0.5 cm

6 cm

5. Find the surface area of the composite solid. Round to the nearest tenth if necessary.

$10\frac{1}{10}$ ft

6 ft

$4\frac{1}{5}$ ft

$5\frac{1}{10}$ ft

$16\frac{1}{4}$ ft
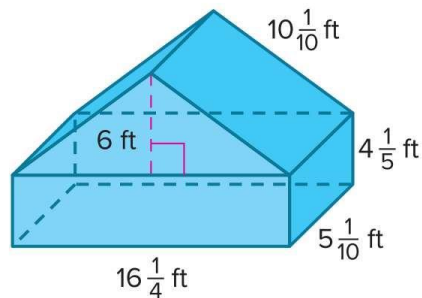
6. Find the surface area of the composite solid. Round to the nearest tenth if necessary.

9 m

3.5 m

9 m

3.5 m

9.035 m

0.8 m
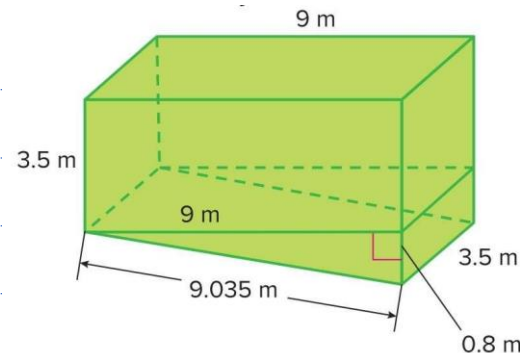
7. For a charity drive, each classroom is given a coin box made of cardboard like the one shown. The student council wants to construct a version of the coin box that has scale factor of 3 times the classroom coin box. Is 100 square feet of cardboard enough to build the new coin box? Write an argument that can be used to defend your solution.

10 in.

15 in.

15 in.   15 in.
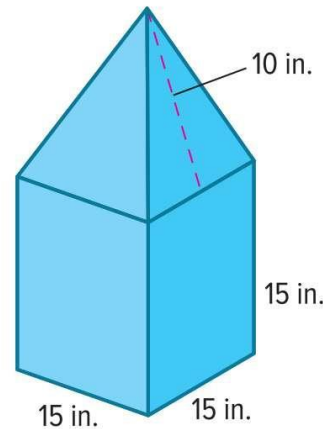
8. Jake wants to buy the foam gymnastic block shown. If the foam used to make the gymnastic block costs $24.99 per cubic foot, what is the cost of this block, to the nearest dollar?

16 in.

$\frac{5}{6}$ ft

$1\frac{2}{3}$ ft

20 in.

24 in.

16 in.
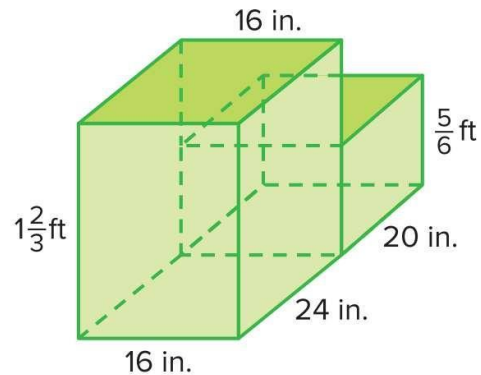
1. What is the area of one side of the penny? Use 3.14 for π. Round to the nearest hundredth if necessary.

7.1 m
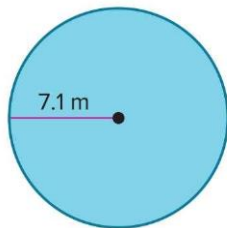
2. Find the area of the circle. Use 3.14 for π. Round to the nearest hundredth if necessary.

4.25 in.
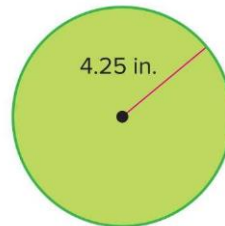
3. What is the area of the drumhead on the drum? Use 3.14 for π. Round to the nearest hundredth if necessary.

14 in.
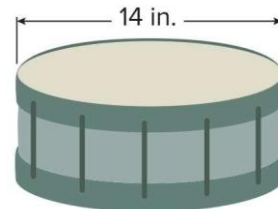
4. Find the area of the circle. Use 3.14 for π. Round to the nearest hundredth if necessary.

19 mm

5. Mr. Ling is adding a pond in the shape of a semicircle in his backyard. What is the area of the pond? Use 3.14 for π. Round to the nearest hundredth if necessary.

$8\frac{3}{4}$ ft
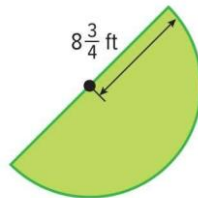
6. Vidur needs to buy mulch for his garden. What is the area of his garden? Use 3.14 for π. Round to the nearest hundredth if necessary.

5.5 yd
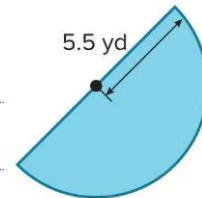
The spinner shown is spun once. Classify the likelihood of the spinner landing on an animal as impossible, unlikely, equally likely, likely, or certain.
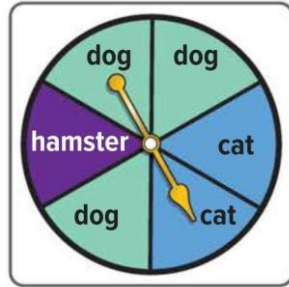
1. the spinner landing on dog

2. the spinner landing on hamster

3. the spinner landing on dog or cat

4. the spinner landing on bird

5. the spinner landing on an animal

6. the spinner landing on cat or hamster

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For Exercises 7 and 8, a card is randomly selected the ones shown.

7. Multiselect Select all events that are unlikely to happen.

- ❑ selecting the letter B
- ❑ selecting the letter T
- ❑ selecting a vowel or S
- ❑ selecting a consonant or vowel
- ❑ selecting a consonant or A
- ❑ selecting the letter Q or R
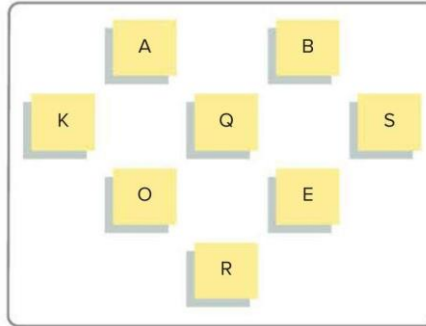
8. Multiselect Select all events that are equally likely to happen as not to happen.

- ❑ selecting the letter B
- ❑ selecting the letter E
- ❑ selecting a vowel or S
- ❑ selecting a consonant or vowel
- ❑ selecting a consonant or A
- ❑ selecting the letter Q, R, B, or K

1. A spinner with four equal sections of blue, green, yellow, and red is spun 100 times. It lands on blue 14 times, green 10 times, yellow 8 times, and red 68 times. **What is the relative frequency of landing on red? green?**

2. The frequency table shows the results of a survey about favorite exhibits. **Find the relative frequency that a randomly selected student's favorite exhibit was either butterflies or trains, as a percent.**

Exhibit	Frequency
Butterfly	12
Dinosaurs	25
Planets	17
Trains	6

3. The graph shows the results of an experiment in which a number cube labeled 1 through 6 is rolled a number of times. **Find the relative frequency of rolling a number greater than 3.**

Number Cube Experiment
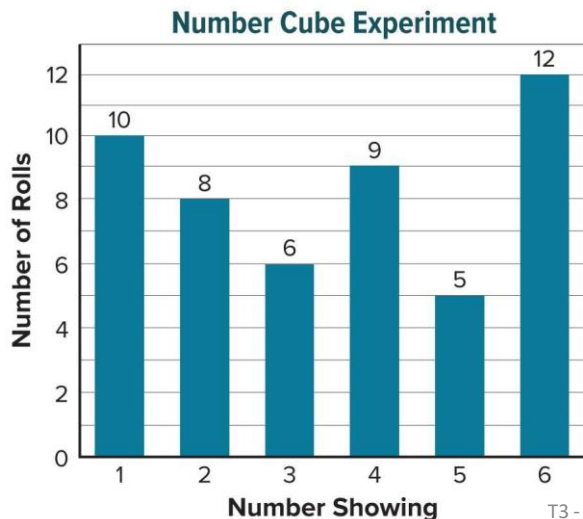
4. A random selection of students was asked the question "What type of gift did you last receive?" and the results were recorded in the relative frequency bar graph. **What is the experimental probability that a student chosen at random received a gift card or money?**

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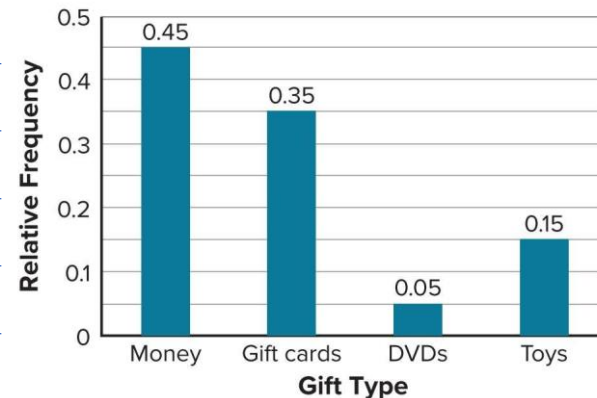
5. Based on previous orders, the manager of an ice cream shop determines the probability that a customer will order chocolate sauce is 85%. If there are 240 sundaes ordered in one weekend, **how many sundaes are expected to be ordered with chocolate sauce?**

1. The spinner shown is spun once. What is the sample space?

2. Each letter in the word **MISSISSIPPI** is written on a piece of paper and placed into a bag. A letter is drawn at random. What is the sample space?

3. A teacher placed the letter cards **E**, **L**, **O**, **R**, **U**, and **W** in a bag. A card is drawn at random. Determine the theoretical probability for drawing a card that has a vowel on it.

4. A player in a board game rolls a six-sided number cube labeled 1 through 6 once. Determine the theoretical probability of rolling a 1 or 2.

EX3. Two number cubes, each labeled 1 through 6, are rolled. **What is the probability of rolling a sum of 9?**

EX4. Two coins are tossed and a number cube labeled 1 through 6 is rolled. **What is the probability of tossing heads at least once and rolling an even number?**

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3. The spinner shown has six equal-size sections and is spun twice. **What is the probability that the product of the numbers spun is 12?**
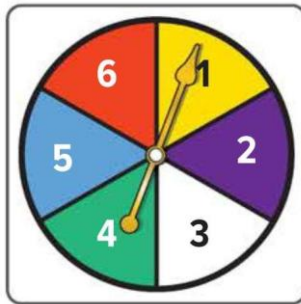
4. A number from 0 to 9 is randomly selected and then a letter from A to D is randomly selected. **What is the probability that the number 3 and a consonant are selected?**

5. Lorelei tosses a coin 4 times. What is the probability of tossing four heads? Express as a percent. Round to the nearest tenth, if necessary.

1. Suppose the chance of rain on Saturday is $\frac{2}{5}$ and the chance of rain on Sunday is also $\frac{2}{5}$. A student wants to run a simulation to estimate the probability that it will rain on both days.

A. How can the student model the chance of it raining on each day? Design a simulation.

_____

_____

B. Suppose the table shows the results of 10 trials of a simulation. An "R" represents a day that it rained and an "N" represents a day that it did not rain.
According to the results of the simulation, what is the experimental probability of having rain on both days?

Trial	1	2	3	4	5	6	7	8	9	10
Saturday	N	R	R	N	N	R	R	N	R	N
Sunday	N	N	R	R	N	R	N	R	R	N

_____

2. Leigh designs and conducts a computer simulation with 30 trials and uses the data from the simulation to create the relative frequency bar graph shown. The graph shows the relative frequency of the number of spins needed for a spinner divided into 6 equal sections labeled A through F to land on each letter at least once.

Using the graph, what is the experimental probability that more than 10 spins are needed to land on each letter at least once? Write the probability as a percent.
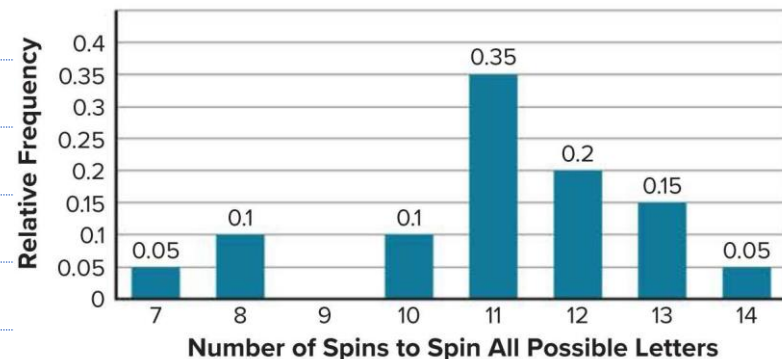
For Exercises 3 and 4, refer to the following information.

Nelly designs and conducts a computer simulation with 50 trials and uses the data from the simulation to create the frequency bar graph shown. The graph shows the relative frequency of the number of rolls needed for a number cube labeled 7 through 12 to roll all of the possible odd numbers.

3. How much greater is the probability that 7 or 11 rolls are needed than 13 rolls?
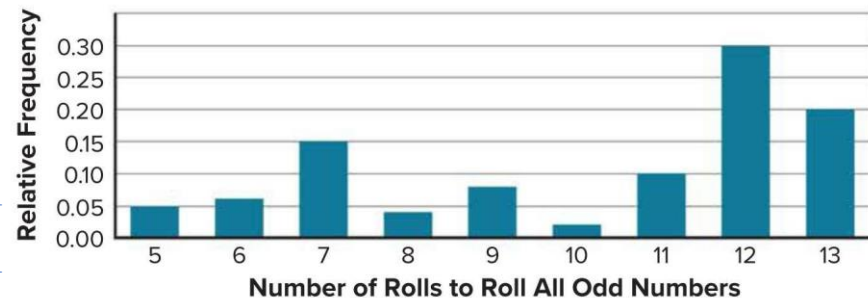
4. Is the probability that 7 or 12 rolls are needed greater than the probability that all of the other rolls are needed? Explain.

5. Use the Internet, or another source, to look up the term fair game. Describe a real-world scenario in which a game is fair. Then describe a real-world scenario in which a game is not fair.

6. **Model with Mathematics** Describe a real-world situation that can be simulated by tossing a coin and rolling a number cube. Be sure to include the number of outcomes in your description.

EX1. The astronomy association wants to take a survey to decide on the theme for their annual celebration. They are presented with three valid sampling descriptions as options to take the survey. **For each sampling description, select the valid sampling method that best represents it. Circle your selection.**

A. a computer randomly chooses 500 people from a list of members	**B.** members are separated by state and 10 people are randomly chosen from each state	**C.** from a list of each member in the association, every 200th is Surveyed
❑ Stratified Random Sample	❑ Stratified Random Sample	❑ Stratified Random Sample
❑ Simple Random Sample	❑ Simple Random Sample	❑ Simple Random Sample
❑ Systematic Random Sample	❑ Systematic Random Sample	❑ Systematic Random Sample

1. For each sampling description, identify the valid sampling method that best describes it. Choose from simple random sample, stratified random sample, or systematic random sample.

a. To determine if a candidate for state senator is popular with voters, 25% of voters in 160 counties are surveyed.	**b.** To determine whether students think a new school library is needed, a computer generates a list of 100 random students and they are surveyed.	**c.** o determine the freshness of doughnuts, a baker selects a doughnut every 30 minutes and checks it.
❑ Stratified Random Sample	❑ Stratified Random Sample	❑ Stratified Random Sample
❑ Simple Random Sample	❑ Simple Random Sample	❑ Simple Random Sample
❑ Systematic Random Sample	❑ Systematic Random Sample	❑ Systematic Random Sample

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2. Identify the type of biased sample for each situation. Choose from convenience sample or voluntary response sample.

a. A physical education teacher posts an online survey about whether students would be interested in a 5K race. The responses received determine whether there will be a 5K race. ❑ convenience sample ❑ voluntary response sample	**b.** To determine the theme of the school dance, the student council president surveys his homeroom class. ❑ convenience sample ❑ voluntary response sample

Identify the sample method used and whether it is biased or unbiased. Then determine whether the inference is valid.

3. To evaluate customer satisfaction, a grocery store manager gives double coupons to anyone who completes a survey as they enter the store. The store manager determines that customers are very satisfied with their shopping experience in his store.	**4.** A member of the cafeteria staff asks every fifth student leaving the cafeteria to rank 5 entrees from most favorite to least favorite. She finds that pizza is one of the favorite entrees.

5. Multiselect To evaluate the defect rate of its lenses, a camera lens manufacturer tests every 100th lens off the production line. Out of 1,000 lenses tested, one lens is found to be defective. The manufacturer concludes that 3 lenses out of 3,000 will be defective. **Select all of the statements that are true about the sampling method.**

❑ This scenario is a systematic random sample.

❑ The sampling method is biased.

❑ The inference is valid.

❑ This scenario is a convenience sample.

❑ The sampling method is unbiased.

1. school librarian is purchasing new books for her book clubs in the coming year. In order to determine how many books she needs, she randomly surveys 25 students who plan to participate in one of her book clubs in the coming year. The table shows the results. Predict how many science fiction books she will need to purchase if 125 students participate in book club next year.

Book Club Type	Number of Students
Autobiography	2
Graphic Novel	7
Mystery	10
Science Fiction	6

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2. A smart tablet manufacturer tests 1 out of every 25 screens for flaws. Out of 125 tablets tested, 2 had defective screens. **How many defective screens should the manufacturer expect out of 45,000 smart tablets?**

3. The superintendent of a school district wants to predict next year's middle school lunch count. The graph shows the results of a survey of randomly selected middle school students. If the district has 5,000 middle school students next year, **about how many students plan to buy lunch 1-2 days a week?**

How Many Days Will You Buy Lunch?

- 5 days 25%
- 1-2 days 37%
- 0 days 13%
- 3-4 days 25%

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4. The guidance department conducted a random survey of the student body and found that 16% of the students plan to volunteer at the school festival. **Predict how many volunteer positions they should plan for a population of 950 students.**

5. The owner of a travel agency randomly surveyed its customers. The survey showed that 55% of the agency's customers were planning an overseas vacation the following year. **Predict how many of the travel agency's 12,400 travelers will vacation overseas the following year.**

6. Open Response Every 30 minutes, a box of crayons is pulled from the assembly line to check the quality. Of 240 checked boxes of crayons, 2 did not pass inspection. How many boxes out of 12,000 should the crayon company expect to not pass inspection?
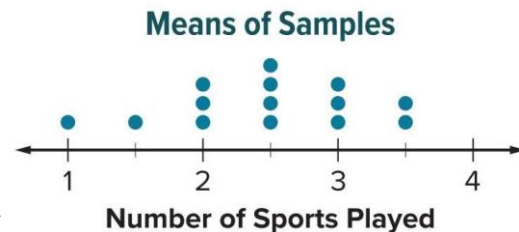
1. The dot plot displays data from 14 random samples, each consisting of 30 middle school students. Each dot represents the mean number of sports played per year by students in the sample.

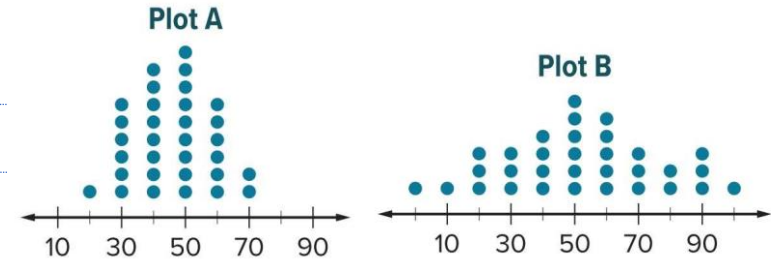**a.** Which number best represents the mean number of sports played by middle school students?

Means of Samples

Number of Sports Played

b. Find and interpret the variability in the distribution.

2. Below are two dot plots containing sample means from the same population.

**A. How many samples are represented in each plot?**
How do you know?

**B. Which dot plot has higher variability? Defend your answer.**

Plot A

Plot B

C. One plot contains samples of size 25, and the other plot contains samples of size 60.
**Which dot plot contains the samples of size 60? How do you know?**

1. The double dot plot shows the weights in pounds of several housecats and small dogs. Compare their centers and variability. What are some appropriate inferences you can make about the data?

Weights (lb)

Housecats

Small Dogs

5 6 7 8 9 10 11 12 13 14
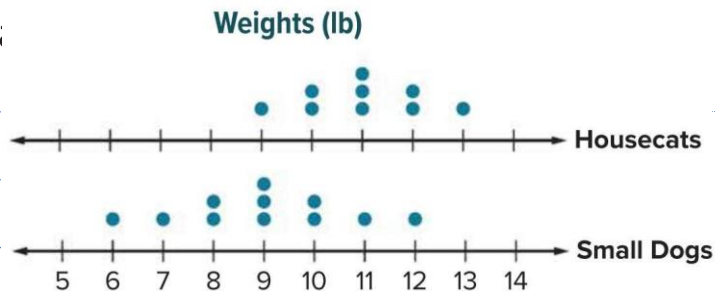
2. The double box plot shows the number of Calories per serving for various fruits and vegetables. What are some appropriate inferences you can make about the data?

Calories per Serving

Fruits

Vegetables

0 25 50 75 100 125 150 175 200
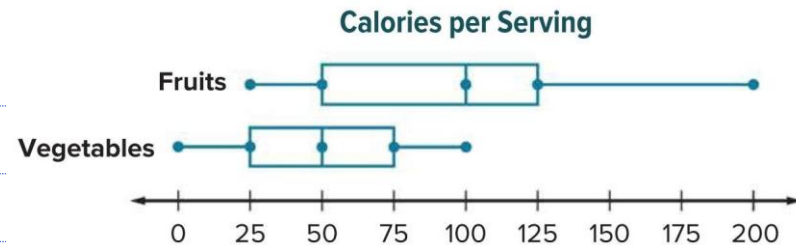
3. Table Item The double box plot represents the average number of hours of homework each week for high school students and middle school students. Use the measures of center and variability of these samples to select the age group(s) to which each statement applies.

Average Number of Hours of Homework per Week

High School Students

Middle School Students
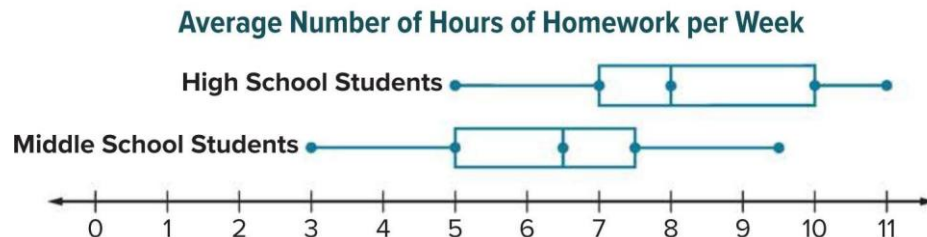
|	Middle School	High School
The median is greater.		
The IQR is 2.5.		
The data have greater variability.		
A person from this sample is more likely to have more than 7 hours of homework a week.		
The data are more symmetric.		

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4. The double box plot shows the number of rainy days for each month in a year for two different cities. For which city is it more likely that a randomly selected month will have 6 or more rainy days?

Number of Rainy Days for Each Month in a Year
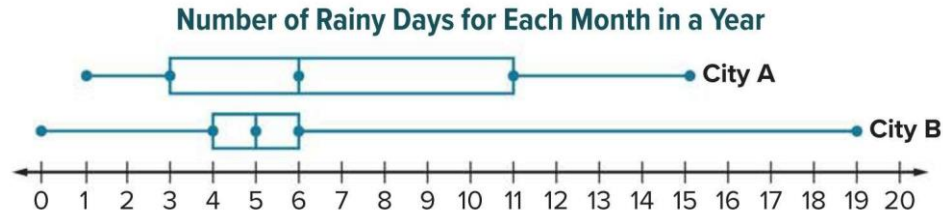
5. The double dot plot shows the number of years of experience playing lacrosse for members of two high school lacrosse teams. A player with six years of experience is on a lacrosse team. On which team is the player more likely to be? Write an argument that can be used to defend your solution.

Number of Years of Experience Playing Lacrosse

1. A cooler is in the shape of a rectangular prism. What is the volume of the cooler? Round to the nearest tenth if necessary.

$10\frac{1}{2}$ in.

12 in.

22 in.
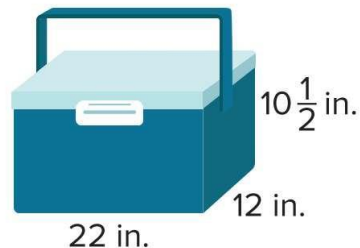
2. A cereal box is in the shape of a rectangular prism. What is the volume of the cereal box? Express your answer as a decimal rounded to the nearest tenth if necessary.

$12\frac{1}{8}$ in.

$1\frac{3}{4}$ in.

8 in.
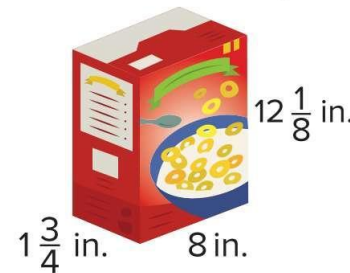
7. A triangular prism has a height of 5.9 meters and volume of 86.376 cubic meters. What is the area of the base of the prism?

8. A rectangular pyramid has a height of 9.5 centimeters and a volume of 494 cubic centimeters. What is the area of the base of the pyramid?

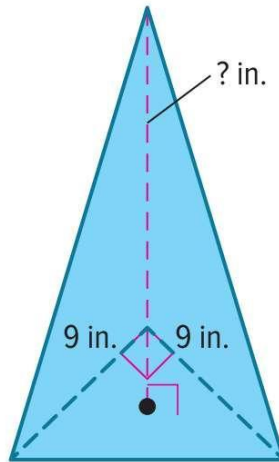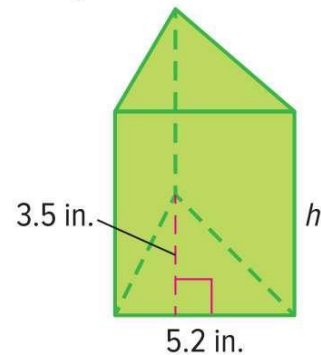**9.** A glass stand to display a doll is in the shape of a right triangular pyramid as shown. The volume of the stand is 202.5 cubic inches. What is the height of the stand?

? in.

9 in.   9 in.

10. A triangular box of sticky notes is shown. The volume of the box of sticky notes is 54.6 cubic inches. What is the height of the box of sticky notes?

3.5 in.   h

5.2 in.

Part (2)

5 questions (from 16-21)
Marks per FRQ (5-10)

EX4. The exact circumference of a circle is 32π inches. What is the approximate area of the circle? Use 3.14 for π. Round to the nearest hundredth if necessary.

7. The exact circumference of a circle is 18π inches. What is the approximate area of the circle? Use 3.14 for π. Round to the nearest hundredth if necessary.

8. The exact circumference of a circle is 34π meters. What is the approximate area of the circle? Use 3.14 for π. Round to the nearest hundredth if necessary.

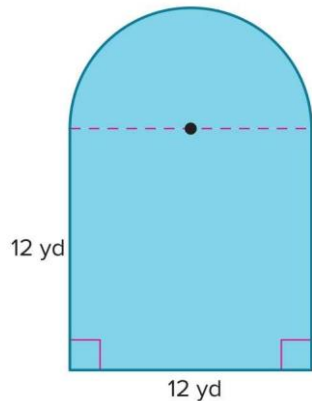**Find the area of each figure. If necessary, use 3.14 for π and round to the nearest hundredth.**

1.

12 yd

12 yd

2.

6 ft

5 ft | 3 ft
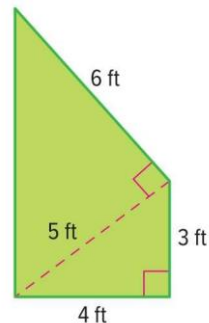
4 ft

3.

5 cm

10 cm

7 cm

6 cm

14 cm

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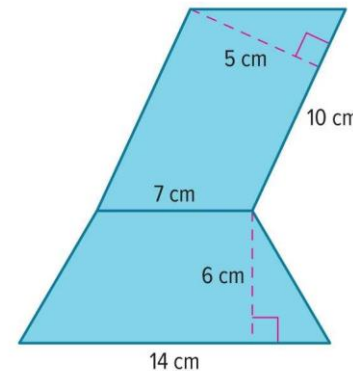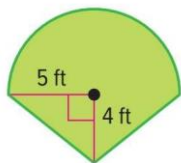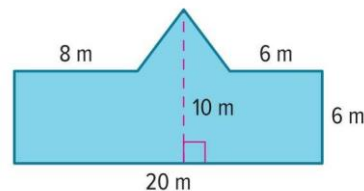**Find the area of each figure. If necessary, use 3.14 for π and round to the nearest hundredth.**

4.

5 ft
4 ft

5.

8 m   6 m
10 m   6 m
20 m

6.

4.8 cm
3.6 cm
5.9 cm
1.1 cm

7. Find the area of the shaded region.

8 ft |← 32 ft →|
8 ft   8 ft
8 ft   8 ft
      8 ft
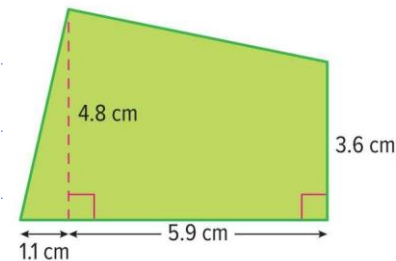
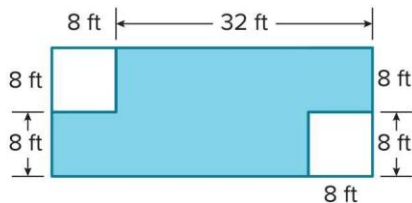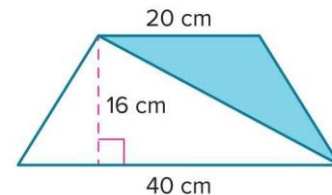**8.** Find the area of the shaded region.

20 cm

16 cm

40 cm

1. An Italian ice shop sells Italian ice in four flavors: lime, cherry, blueberry, and watermelon. The ice can be served plain, mixed with ice cream, or as a drink. Using an organized list or table, what is the sample space of possible outcomes?

2. A deli offers a lunch consisting of a soup, salad, and sandwich from the menu shown in the table. A customer randomly chooses lunch consisting of a soup, salad, and sandwich. Construct and use a tree diagram to determine the sample space of the event. How many possible outcomes are in the sample space?

Soup	Salad	Sandwich
Tortellini	Caesar	Roast Beef
Lentil	Macaroni	Ham
		Turkey

EX2. How much paper is needed to cover the gift box shown?

3.6 in.

3.6 in.

3 in.

4 in.

14 in.
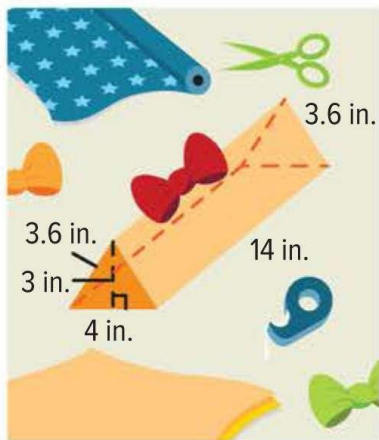
3. How much cardboard is needed to make the single slice of pizza box shown?

11 in.

6.7 in.

1 in.

11.5 in.
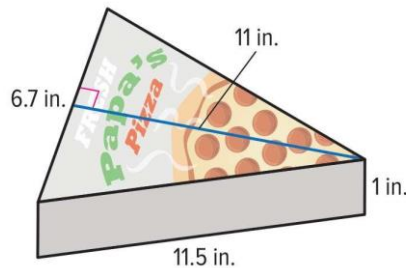
4. What is the surface area of the triangular prism-shaped toy car ramp shown?

15 in.

8 in.

7 in.

17 in.
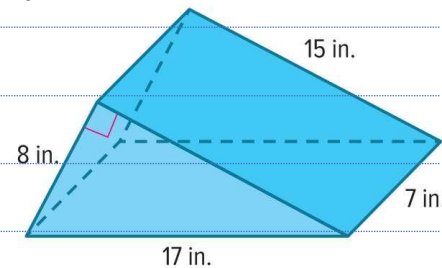
5. The table shows the lengths of time for rides at a fair. Zane will choose a ride at random and wants to find the probability of choosing a ride that lasts less than 200 seconds. What is the probability of the complement of the event? Describe the complement.

Ride	Time (seconds)
Barrel	150
Bumper Cars	195
Circus Carousel	210
Log Ride	120
Roller Coaster	55
Swings	225
Train	300
Zero Gravity Spinner	65

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6. Red is spun on a spinner with five equal-size sections labeled red, yellow, blue, green, and purple. What is the probability of the complement of the event? Describe the complement.

7. **Multiselect**
A sportscaster predicted that the local high school baseball team has a 75% chance of winning tonight. Select all of the values that represent the probability of the team not winning.

❑ 0.75 ❑ 25%

❑ 0.25 ❑ $\frac{3}{4}$

❑ 75% ❑ $\frac{1}{4}$

EX1. A high school athletic director is purchasing equipment for the athletic department in the coming year. In order to determine how much equipment is needed, the director randomly surveys 150 students who plan to participate in athletics in the coming year. The table shows the results.

How many volleyball uniforms should the director purchase if 500 total students plan to participate in athletics?
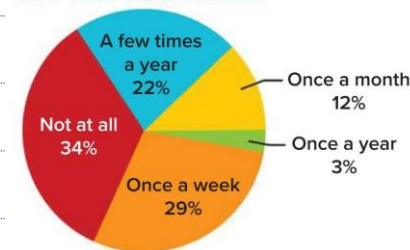
Sport	Students
Baseball/Softball	36
Basketball	30
Football	45
Gymnastics	12
Tennis	18
Volleyball	9

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EX2. The superintendent of a school district wants to determine the number of volunteer positions to have available for students. The graph shows the results of a survey where randomly selected teenagers within the district were asked, "How often do you volunteer?"

If the district has 2,000 teenage students, about how many positions should the superintendent have available for students who volunteer once a week?

How Often Teens Volunteer

- A few times a year 22%
- Once a month 12%
- Once a year 3%
- Once a week 29%
- Not at all 34%

1. school librarian is purchasing new books for her book clubs in the coming year. In order to determine how many books she needs, she randomly surveys 25 students who plan to participate in one of her book clubs in the coming year. The table shows the results. Predict how many science fiction books she will need to purchase if 125 students participate in book club next year.

Book Club Type	Number of Students
Autobiography	2
Graphic Novel	7
Mystery	10
Science Fiction	6

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2. A smart tablet manufacturer tests 1 out of every 25 screens for flaws. Out of 125 tablets tested, 2 had defective screens. **How many defective screens should the manufacturer expect out of 45,000 smart tablets?**

3. The superintendent of a school district wants to predict next year's middle school lunch count. The graph shows the results of a survey of randomly selected middle school students. If the district has 5,000 middle school students next year, **about how many students plan to buy lunch 1-2 days a week?**

How Many Days Will You Buy Lunch?

5 days 25%
1-2 days 37%
0 days 13%
3-4 days 25%

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4. The guidance department conducted a random survey of the student body and found that 16% of the students plan to volunteer at the school festival. **Predict how many volunteer positions they should plan for a population of 950 students.**

5. The owner of a travel agency randomly surveyed its customers. The survey showed that 55% of the agency's customers were planning an overseas vacation the following year. **Predict how many of the travel agency's 12,400 travelers will vacation overseas the following year.**