FINITE MATH   GEOMETRY   Form D   NAME _____

Show all work on the back or on a separate paper. No Calculators.
Be sure to give all units. You may answer in terms of π.
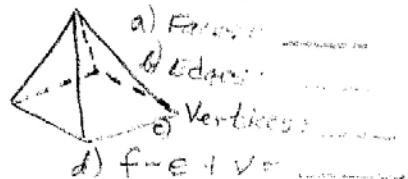
1. a) Faces ____
    b) Edges ____
    c) Vertices ____
    d) F - E + V ____

2. A rectangular field is 80 feet long and 40 feet
   wide. If fence costs $5 per yard, how
   much would it cost to enclose the field?

3. An angle is 12°.
   a) Its supplement is _____.
   b) Its complement is _____.

4. An angle is 4 less than its complement.
   Find the complement and the angle.

5. If m_1 is parallel to m_2, find X and Y.

   80°
   100° Y
      X

   X = _____
   Y = _____

6. If ∠ABC = 32°, m∠CDE = 44°,
   find ∠DCE.
   Find ∠GCF.
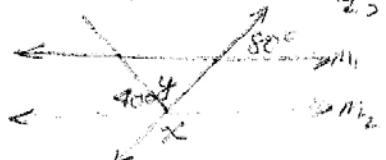
7 a) Find the sum of the angles
   of a regular pentagon.
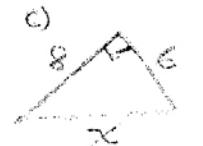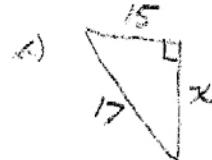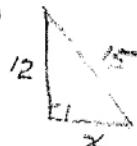
   b) Find the sum of the angles
   of a regular octagon.

8. Find X:
   a) 12   15   X
   b) 15   17   X
   c) 8   6   X

9.
   A
   12   D
        4
   B X E 8   C
   Find X.

10.
   8   7   6   9
       3   X   8
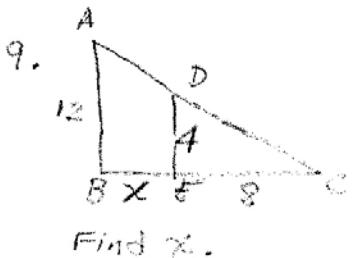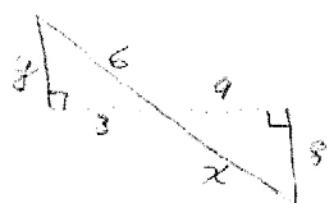
11 a) 7.5 cm. = _____ mm.
   b) 7.5 cg. = _____ g.
   c) 350 g = _____ kg.
   d) 0.035 mL = _____ cL.
   e) 0.035 cL = _____ mL.

12. Find shaded area.

13. Find x.

a) Find x.

b) Find area.
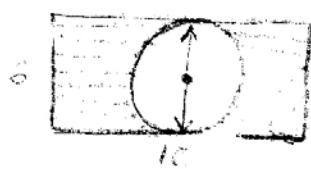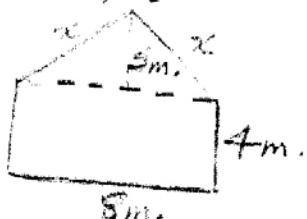
c) Find perimeter.

14. Given a box 8cm by 10cm by 4cm.

a) Find volume.

b) Find surface area.

15a) How many square inches in a square foot? _____

b) How many cubic feet in a cubic yard? _____

16. If it costs $300 to carpet a room 9' by 12', how much would it cost to carpet a room that is 20' by 36'?

17. If a 6" pizza costs $8, what would you expect to pay for a 12" pizza, (based upon size/area)

18. If a cake recipe calls for 2 eggs, how many eggs will be needed if you triple the dimensions of the cake?

19a) Find the volume of a cylinder whose base radius is 16cm. and height is 8 cm.

b) Surface area?

ANSWER IN TERMS OF π.

20. Find the volume of a cone whose base radius is 8 and whose height is 10 cm.

21. Find the volume of a sphere with diameter 10 cm.

$$V = Bh$$
$$V = \frac{1}{3}Bh$$
$$V = \frac{4}{3}\pi r^3$$

12. Find shaded area.

13. Find x.

a) Find x.

b) Find area.

c) Find perimeter.

14. Given a box 8cm by 12cm by 4cm.

a) Find volume.

b) Find surface area.

15 a) How many square inches in a square foot? _____

b) How many cubic feet in a cubic yard? _____

16. If it costs $300 to carpet a room 10' by 12', how much would it cost to carpet a room that is 20' by 36'?

17. If a 6" pizza costs $8, what would you expect to pay for a 12" pizza, (based upon size/area)?

18. If a cake recipe calls for 2 eggs, how many eggs will be needed if you triple the dimensions of the cake?

19 a) Find the volume of a cylinder whose base radius is 16cm. and height is 8 cm.

b) Surface area?

20. Find the volume of a cone whose base radius is 8 and whose height is 10 cm.

21. Find the volume of a sphere with diameter 10 cm.

$$V = Bh$$
$$V = \frac{1}{3} Bh$$
$$V = \frac{4}{3} \pi r^3$$

ANSWER IN TERMS OF π.

1. What is the area of a circular
   region whose diameter is
   12 centimeters?

   A.   12π square centimeters
   B.   24π square centimeters
   C.   36π square centimeters
   D. 144π square centimeters

2. What is the area of a
   square whose side is
   8 feet?

   A.   32 feet
   B.   32 square feet
   C.   64 feet
   D.   64 square feet

3. What is the surface area of a
   rectangular solid that is 15
   inches long, 10 inches wide,
   and 5 inches high?

   A.   750 cubic inches
   B.   750 square inches
   C.   550 square inches
   D.   550 cubic inches

4. What is the volume of a
   rectangular solid that is
   15 inches long, 10 inches
   wide, and 5 inches high?

   A. 750 cubic inches
   B. 750 square inches
   C. 550 cubic inches
   D. 550 square inches

5. What is the volume of a right
   circular cylinder that has a
   radius of 6 inches and is
   8 inches high?

   A.   92π cubic inches
   B. 288π cubic inches
   C. 288π square inches
   D. 368π cubic inches

6. What is the volume of a
   circular cone that has a
   radius of 12 inches and is
   10 inches high?

   A. 1440π cubic inches
   B.   480π square inches
   C.   480π cubic inches
   D.   400π cubic inches

7. What is the volume of a sphere
   that has a radius of 6 feet?

   A. 144π cubic feet
   B. 144π square feet
   C. 288π square feet
   D. 288π cubic feet

8. What is the volume in centi-
   liters of a 5.25-liter bottle?

   A.   .525 centiliters
   B.   52.5 centiliters
   C.   525 centiliters
   D.   5250 centiliters

9. Which of the following would
   NOT be used to describe the
   amount of liquid contained in
   a can?

   A. gallons
   B. centimeters
   C. liters
   D. cubic feet

10. The amount of wall surface that
    can be covered by the contents
    of a can of paint is given by
    which measure?

    A. square feet
    B. gallons
    C. cubic feet
    D. liters

Fin. [illegible] Math Geometry Ch. 5 - Solutions Form D

M.C.

1. C
2. D
3. C
4. A
5. B
6. C
7. D
8. C
9. B
10. A

[illegible]

2. P [illegible] = 8 [illegible]

3. [illegible]

4x [illegible]
x [illegible] 96
x = 135, 4x = 32°

y - 4 [illegible] = 180

x + 32° = 180

6.

44°
32°
C
E
D
G

∠BCG = 90 - 32° = 58°
∠DCE = ∠BCG = 58°
58° + 44° + ∠CED = 180°
∠CED = 180 - 102 = 78°
∠GEF = ∠CED = 78°

7a) Pentagon = 5 sides
− 2
3 × 180° = 540°

b) Octagon = 8 sides
− 2
6 × 180° = 1080°

8. a)

3.5
3

x = 9

x² + 12² = 15²
x² + 144 = 225
x² = 81
x = 9

x² + 15² = 17²
x² + 225 = 289
x² = 64
x = 8

c) 8, 6
8² + 6² = x²
64 + 36 = x²
x² = 100
x = 10

9. $\frac{12}{4} = \frac{x+8}{8}$
4x + 32 = 96
4x = 64
x = 16

10. Error in Problem!
Method #1
3² + y² = 6²
9 + y² = 36
y² = 27
y = √27

9² + 8² = x²
81 + 64 = x²
145 = x²
x = √145

Method #2
$\frac{3}{9} = \frac{6}{x}$
3x = 54
x = 18
$\frac{3}{9} = \frac{y}{8}$
9y = 24
y = 8/3

11. [illegible] 75, 0.35
0.75
0.33
0.66

12. A_REC − A_CIRCLE (r = 3)
LW − πr²
A = 60 − 9π

13.

x
3
x
4
4
5

a) x = 5 m

b) A = REC + TRI
= 32 + ½(5 · 8)
= 32 + 17 = 49 m²

c) P = 8 + 4 + 4 + 5 + 5
= 26 m

14a) V = lwh
= 8 · 10 · 4 = 320 cm³

b) SA = 2(80) + 2(32) + 2(40)
= 160 + 64 + 80
= 304 cm²

15a) 12² = 144
b) 3³ = 27

16. $\frac{2 \times 2}{36 \times 36} = \frac{2 \cdot 2}{x}$
x = 1296

17. $\frac{\pi 6^2}{\pi 12^2} = \frac{8}{x}$
$\frac{36}{144} = \frac{8}{x}$
x = 32

EXTRA CREDIT
18. $\frac{LWH}{3L \cdot 3W \cdot 3H} = \frac{2}{x}$
$\frac{1}{27} = \frac{2}{x}$
x = 54 eggs

19a) V = πr²h

19b) Top: πr² = 12π
Bottom: πr² = 12π

20. V = ⅓πr²h

21. V = $\frac{4}{3}\pi r^3$
$\frac{4\pi 5^3}{3}$
= 4 [illegible]