

**GEOMETRY BASIC
SECOND SEMESTER
"Practice Final Exam"**

Name: _____

CHAPTER 6:

1. What is the **sum** of the interior angle measure of a **pentagon**:

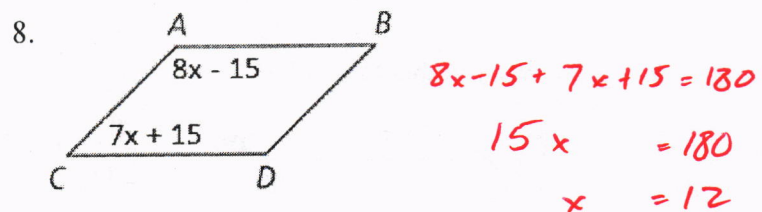
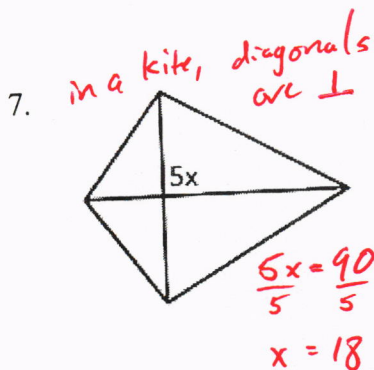
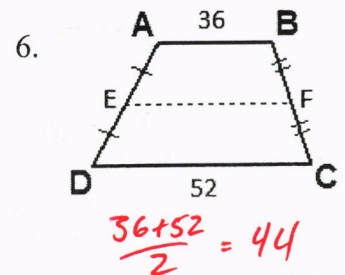
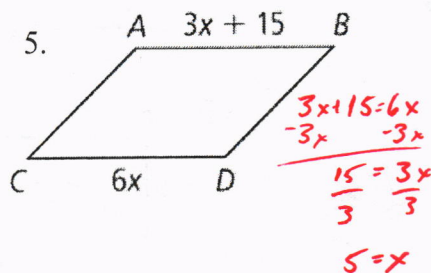
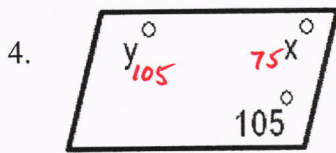
$$(n-2) \cdot 180 \rightarrow (5-2) \cdot 180 = 540$$

2. What is the measure of **each** interior angle of a 18-gon:

$$(18-2) \cdot 180 = 2880 \rightarrow \frac{2880}{18} = 160$$

3. What is the **exterior** measure of a **hexagon**: (the measure of one exterior angle)

$$360 \div 6 = 60$$



CHAPTER 7:

1. Solve the proportion: $\frac{y+7}{9} = \frac{8}{5}$

$$\begin{aligned} 5y + 35 &= 72 \\ 5y &= 37 \\ y &= 7.4 \end{aligned}$$

2. A basketball team played 32 games and won 20 games. What is the ratio of games lost to games played?

32

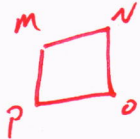
$$\begin{aligned} 12:32 \\ 3:8 \end{aligned}$$

12

3. A 5 foot girl casts a 3 foot shadow. If tree she is standing next to casts a 18 foot shadow, how tall is the tree?

$$\begin{aligned} \frac{5}{3} &= \frac{x}{18} \rightarrow 90 = 3x \\ 30 &= x \end{aligned}$$

4. $MNOP \sim QRST$ with a scale factor of 5 : 4. $MP = 85$ mm. What is the value of QT ?



$$\frac{5}{4} = \frac{85}{x}$$

$$5x = 340$$

$$x = 68$$

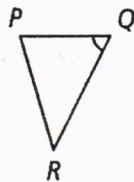
5. To the nearest inch, a door is 75 in. tall and 35 in. wide. What is the ratio of the **width** to the **height**?

$$35 : 75$$

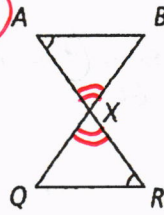
$$7 : 15$$

6. Which pair of triangles can be proven similar by the AA ~ Postulate?

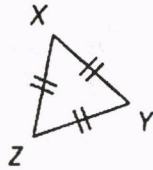
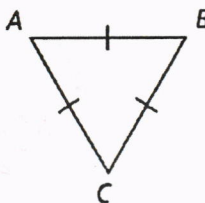
(A)



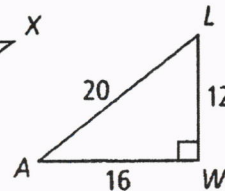
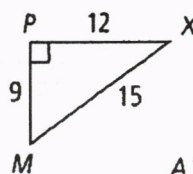
(C)



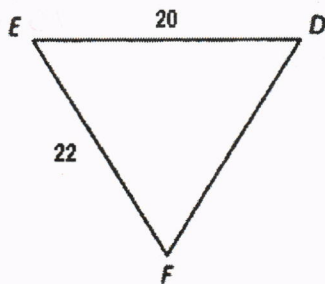
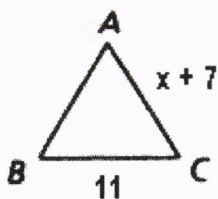
(B)



(D)



7. $\triangle ACB \sim \triangle FED$. What is the value of x ?



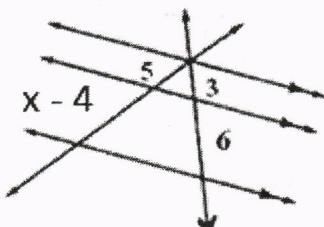
$$\frac{11}{20} = \frac{x+7}{22}$$

$$242 = 20x + 140$$

$$102 = 20x$$

$$5.1 = x$$

8. Find the value of x :



$$\frac{5}{x-4} = \frac{3}{6}$$

$$30 = 3x - 12$$

$$42 = 3x$$

$$14 = x$$

if you notice that the lengths double
 $x - 4 = 10$
 $x = 14$

CHAPTER 8:

Longest side is "c"

1. Classify a triangle with side lengths of 17, 8 and 15. *Pythagorean Converse*

$$8^2 + 15^2 = 17^2$$

$$289 = 289$$

Right

$$a^2 + b^2 = c^2$$

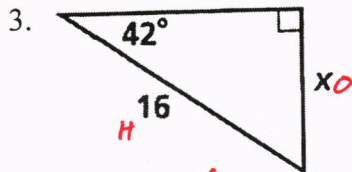
if equal \rightarrow right
c is too big \rightarrow obtuse
c is too small \rightarrow acute

2. Classify a triangle with side lengths of 5, 18, 13.

$$5^2 + 13^2 = 18^2$$

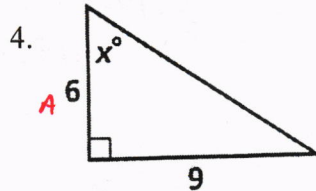
$$194 < 324$$

Obtuse



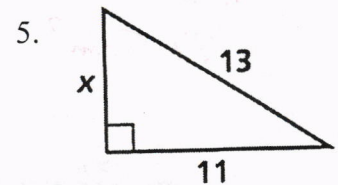
$$\sin 42 = \frac{x}{16}$$

$$x = 10.7$$



$$\tan x = \frac{9}{6}$$

$$\tan^{-1}(\frac{9}{6}) = 56.3$$



$$x^2 + 11^2 = 13^2$$

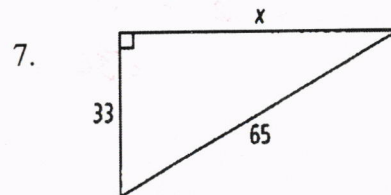
$$x^2 = 48$$

$$x = 6.9$$



$$7^2 + 7^2 = x^2$$

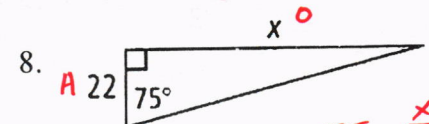
$$9.9 = x$$



$$x^2 + 33^2 = 65^2$$

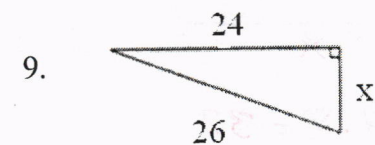
$$x^2 = 3136$$

$$x = 56$$



$$\tan 75 = \frac{x}{22}$$

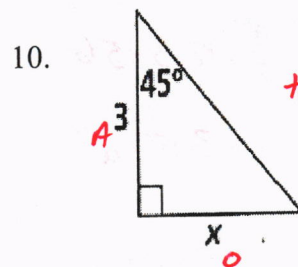
$$x = 82.1$$



$$x^2 + 24^2 = 26^2$$

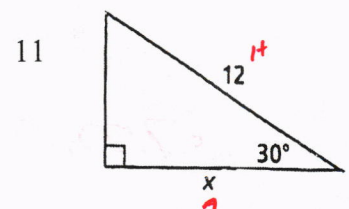
$$x^2 = 100$$

$$x = 10$$



$$\tan 45 = \frac{x}{3}$$

$$x = 3$$



$$\cos 30 = \frac{x}{12}$$

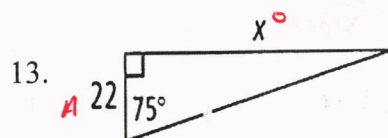
$$x = 10.4$$



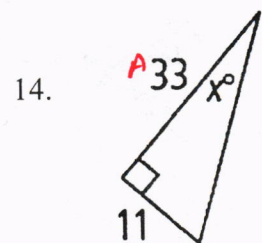
$$\sin 28 = \frac{6}{x}$$

$$x = \frac{6}{\sin 28}$$

$$x = 12.8$$



$$\tan \text{ Same as } 48$$



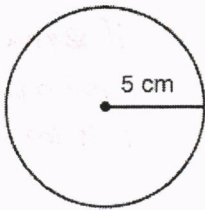
$$\tan x = \frac{11}{33}$$

$$\tan^{-1}(\frac{11}{33}) = 18.4$$

CHAPTER 10:

What is the area of each figure below? Round to the nearest tenth.

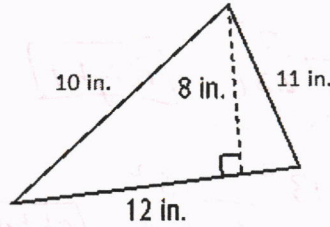
1.



$$\pi \cdot 5^2$$

$$78.5 \text{ cm}^2$$

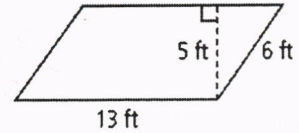
2.



$$\frac{1}{2} \cdot 12 \cdot 8$$

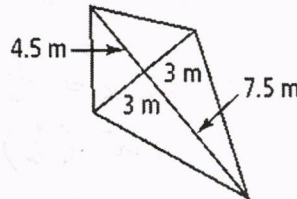
$$48 \text{ in}^2$$

3.



$$13 \cdot 5 = 65 \text{ ft}^2$$

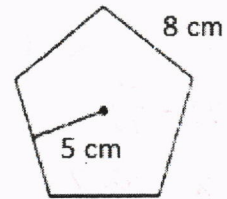
5.



$$\frac{1}{2} \cdot 6 \cdot 12$$

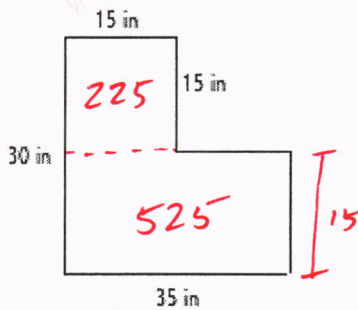
$$= 36 \text{ m}^2$$

6.



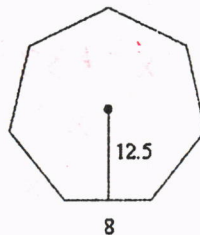
$$\frac{1}{2} \cdot 5 \cdot 40 = 100 \text{ cm}^2$$

7.



$$= 750 \text{ in}^2$$

8.

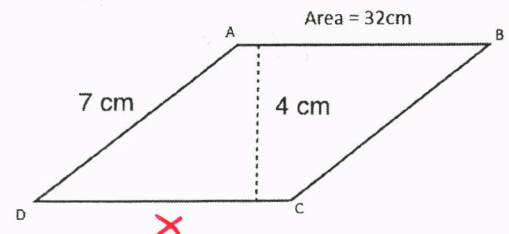


$$\frac{1}{2} \cdot 12.5 \cdot 56$$

$$= 350 \text{ u}^2$$

Find DC

9.

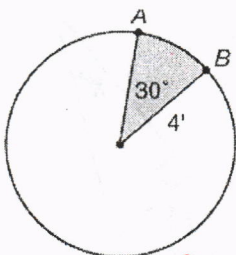


$$4 \cdot x = 32$$

$$x = 8 \text{ cm}$$

Find the ARC LENGTH

10.



$$2\pi \cdot 4 \cdot \frac{30}{360}$$

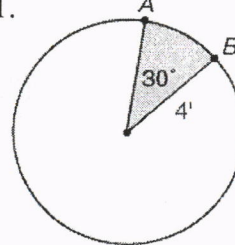
$$2.1 \text{ u}$$

$$\pi \cdot 4^2 \cdot \frac{30}{360}$$

$$4.2 \text{ u}^2$$

Find the Area of the Sector

11.



$$\pi \cdot 4^2 \cdot \frac{30}{360}$$

$$4.2 \text{ u}^2$$

CHAPTER 11:

1. A polyhedron has 6 vertices and 9 edges. How many faces does it have?

$$F + V = E + 2$$

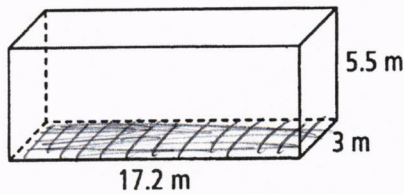
$$F + 6 = 9 + 2 \rightarrow F = 5$$

2. A polyhedron has 25 faces and 36 edges. How many vertices does it have?

$$25 + V = 36 + 2 \rightarrow V = 13$$

FIND VOLUME, LATERAL AREA & SURFACE AREA for each of the figures below:

3.



$$B: 51.6$$

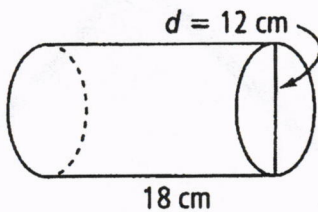
$$P: 40.4$$

$$\text{Volume: } 5.5 \times 3 \times 17.2 = 283.8 \text{ m}^3$$

$$\text{LA: } 40.4 \times 5.5 = 222.2 \text{ m}^2$$

$$\text{SA: } 2 \cdot 51.6 + 40.4 \cdot 5.5 = 325.4 \text{ m}^2$$

4.

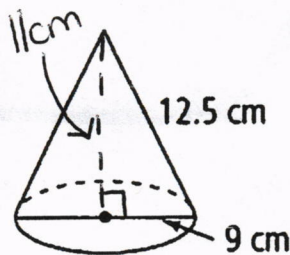


$$\text{Volume: } 2034.7$$

$$\text{LA: } 678.24$$

$$\text{SA: } 904.3$$

5.

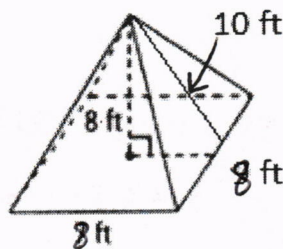


$$\text{Volume: } 233.15$$

$$\text{LA: } 176.6$$

$$\text{SA: } 240.21$$

6.

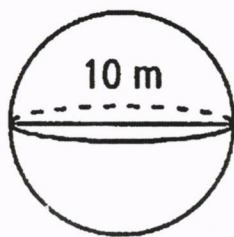


$$\text{Volume: } 170.67$$

$$\text{LA: } 160$$

$$\text{SA: } 224$$

7.



Radius = 5

Volume: 523.33SA: 314**CHALLENGING MIXED REVIEW:**

1. The perimeter of a square is 36cm.



$$x + x + x + x = 36 \rightarrow 4x = 36$$

$$x = 9$$

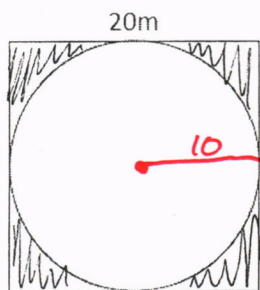
- a. What is the length of each side of the square?

9 cm

- b. What is the area of the square?

$$9 \times 9 = 81 \text{ cm}^2$$

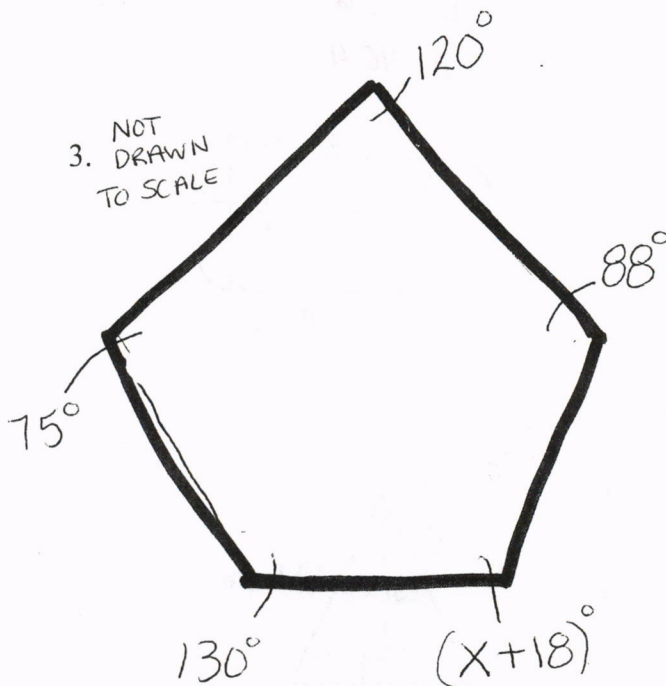
2. Find the Area of the shaded region:



$$20 \times 20 = 400$$

$$\pi \cdot 10^2 = 314$$

$$400 - 314 = 86 \text{ m}^2$$

3. NOT
DRAWN
TO SCALEFIND x

$$(5-2) \cdot 180 = 540$$

$$75 + 120 + 88 + x + 18 + 130 = 540$$

$$x + 431 = 540$$

$$x = 109$$