GEOMETRY HONORS FINAL REVIEW

Part I: Right Triangles and Trigonometry **Chapter 7: Right Triangles and Trigonometry**

1) Classify each statement as true or false:

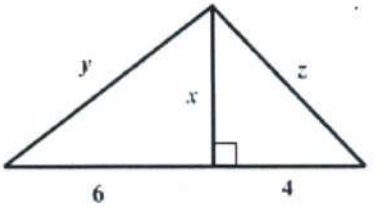
a) The geometric mean between 6 and 10 is $2\sqrt{15}$: _____

b) When simplified $\frac{1}{\sqrt{8}}$ equals $\frac{\sqrt{2}}{4}$: _____

c) A triangle with sides having lengths 5, 10, and 12 must be acute: _____

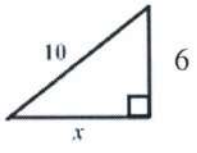
2) The diagram shows a right triangle with the altitude drawn to the hypotenuse. Find the values of x, y and z.

$x =$ _____ $y =$ _____ $z =$ _____



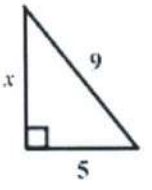
Solve for x:

3)



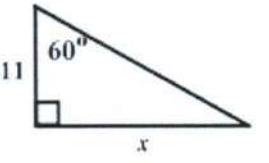
$x =$ _____

4)



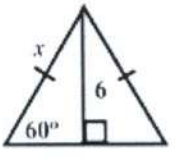
$x =$ _____

5)



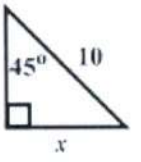
$x =$ _____

6)



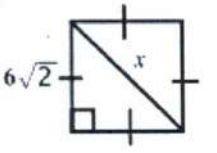
$x =$ _____

7)



$x =$ _____

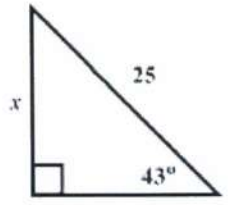
8)



$x =$ _____

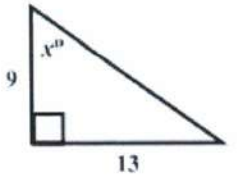
Find the value of x. Find lengths correct to the nearest integer and angles correct to the nearest degree.

9)



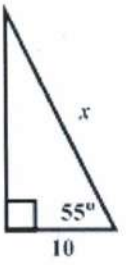
$x =$ _____

10)



$x =$ _____

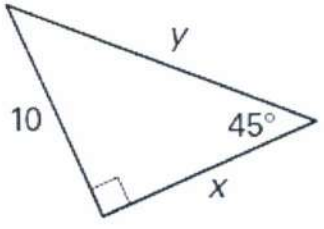
11)



$x =$ _____

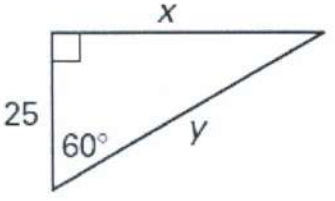
Find the value of each variable. Write your answers in simplest radical form.

12)



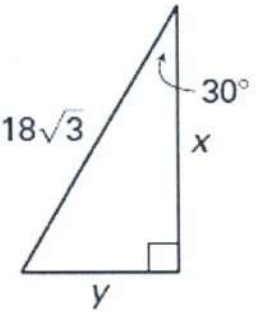
$x =$ _____ $y =$ _____

13)



$x =$ _____ $y =$ _____

14)

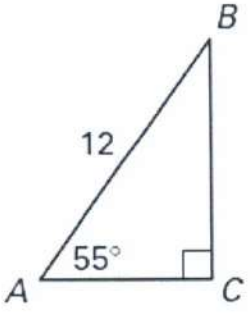


$x =$ _____ $y =$ _____

15) You are measuring the height of a Ferris wheel at an amusement park. You are standing 125 feet from its base. You measure the angle of elevation from a point on the ground to the top of the Ferris wheel to be 51°. Estimate the height of the Ferris wheel. Round your answer to the nearest foot.

Solve the right triangle. Round decimal answers to the nearest tenth.

16)

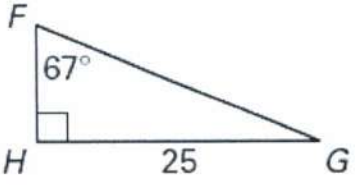


$m\angle B =$ _____

AC = _____

BC = _____

17)

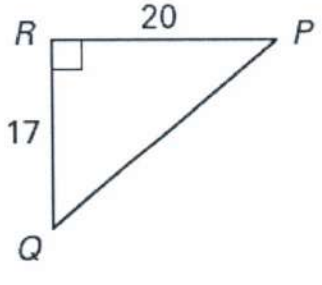


$m\angle G =$ _____

FH = _____

FG = _____

18)



$m\angle P =$ _____

$m\angle Q =$ _____

PQ = _____

Part II: Quadrilaterals **Chapter 8: Quadrilaterals**

Questions 1-7 refer to the diagram. *HOPE* is a parallelogram. Find the indicated lengths or angle measures.

1) If $HO = 14$, then $EP =$ _____

2) If $HS = 5$, then $SP =$ _____

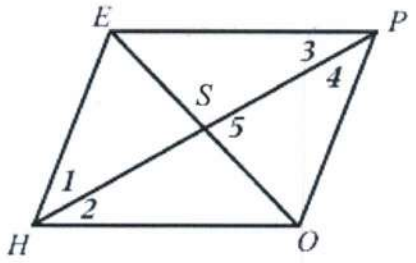
3) If $m\angle HEP = 120°$,then $m\angle HOP =$ _____

4) If $m\angle 3 = 20°$ and $m\angle 4 = 40°$, then $m\angle 2 =$ _____

5) If $HE = 17 - 5x$ and $OP = 3x - 7$, then $x =$ _____

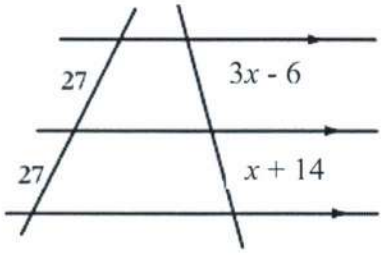
6) If $ES = 2x + 6$ and $EO = 40$, then $x =$ _____

7) If $m\angle EHO + m\angle EPO = 150°$ and $m\angle HOP = x$, then $x =$ _____



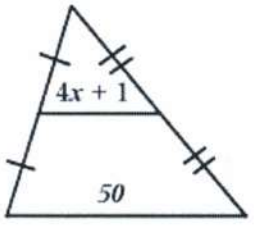
Solve for x:

8)



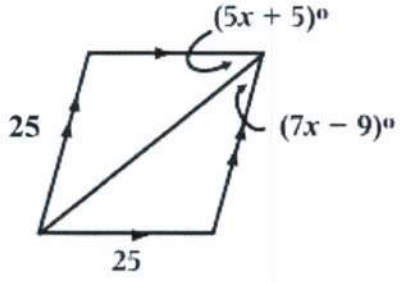
$x =$ _____

9)



$x =$ _____

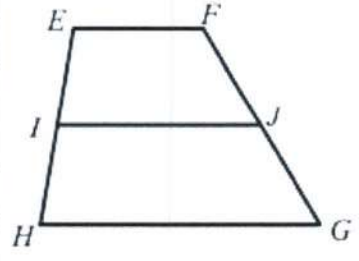
10)



$x =$ _____

For Questions 11 – 14: $\overline{IJ}$ is the median / midsegment of trapezoid *EFGH*. Find the value of x.

	EF	***HG***	***IJ***	***x***
11)	7	13	x	
12)	$3\frac{1}{2}$	x	$5\frac{1}{4}$	
13)	18.3	x	21.2	
14)	9	$x + 8$	x	



Give the most descriptive name for quad. $ABCD$:

15) $\angle A \cong \angle C$ and $\angle B \cong \angle D$: _____

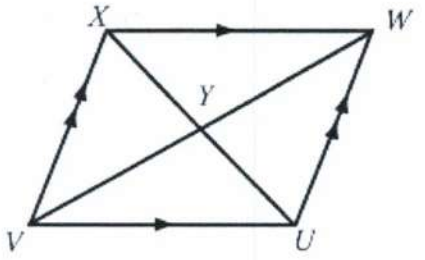
16) $\overline{AB} \cong \overline{BC} \cong \overline{CD} \cong \overline{DA}$ and $\angle A \cong \angle B$: _____

17) $\overline{AB} \parallel \overline{DC}$, $\overline{AD} \cong \overline{BC}$, and $DC > AB$: _____

Questions 18-19 refer to the diagram. $UVXW$ is a parallelogram.

18) If $m\angle VXW = 110°$, then $m\angle XWU =$ _____

19) If $XY = 2x + 10$ and $UY = 4x$, then $x =$ _____



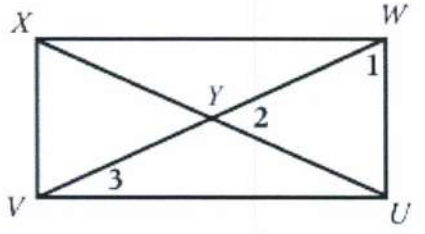
Questions 20 - 22 refer to the diagram. $UVXW$ is a rectangle.

20) If $XY = 10$, then $YU =$ _____ and $VW =$ _____

21) If $XW = x + 40$ and $VU = 2x - 10$, then $x =$ _____

and $VU =$ _____

22) If $m\angle 1 = 65°$, then $m\angle 2 =$ _____ and $m\angle 3 =$ _____



Complete:

23) The sum of the measures of the exterior angles of any convex polygon is _____

24) The measure of each exterior angle of a regular 15-sided polygon is _____

25) If $m\angle A = 3x + 3$, $m\angle B = 2x + 8$, and $m\angle C = 2x + 1$, find the numerical measures of each angle of ΔABC.

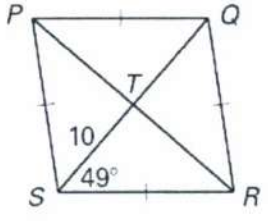
$m\angle A =$ _____ $m\angle B =$ _____ $m\angle C =$ _____

26) The measure of each interior angle of a regular polygon is 170°. How many sides does the polygon have? _____

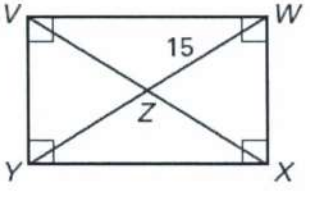
27) The sum of the measures of the angles of a convex polygon with n sides is _____

Find the indicated measure:

28) $m\angle PSQ =$ _____



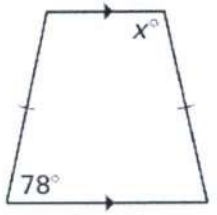
29) $XV =$ _____



30) What is the measure of an interior angle and an exterior angles of a regular 30-gon?

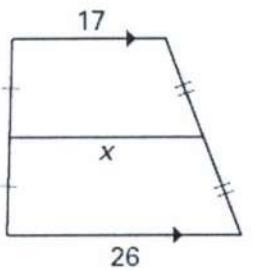
Find the value of x:

31)



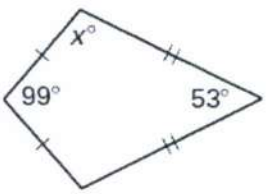
$x =$ _____

32)



$x =$ _____

33)

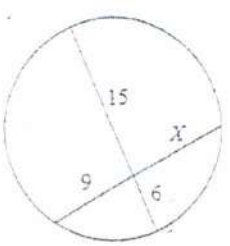


$x =$ _____

PART III: Properties of Circles **Chapter 10: Properties of Circles**

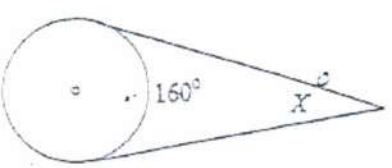
Find x:

1)



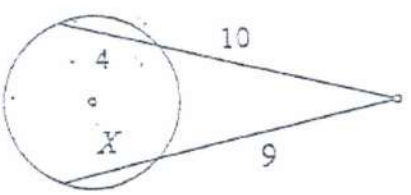
$x =$ _____

2)



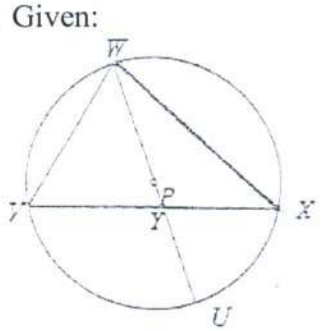
$x =$ _____

3)



$x =$ _____

4) Given:



$\odot P$

$m\overset{\frown}{WX} = 100°$

$m\overset{\frown}{VW} = 78°$

$\overline{WU}$ is a diameter

Find:

$m\angle WVX$

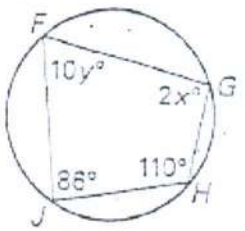
$m\angle VWU$

$m\angle VYW$

5) The measures of the angles of a triangle are in the ratio of 2:3:5. What is the measure of the smallest angle?

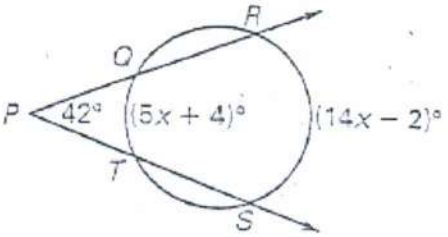
Find the value of each variable:

6)



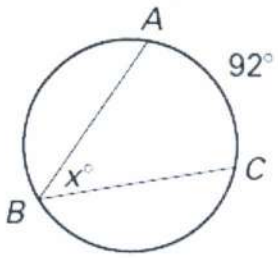
$x =$ _____ $y =$ _____

7)



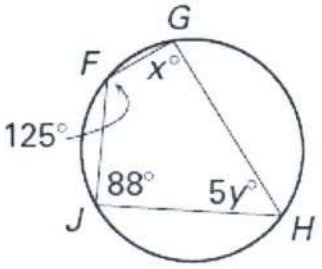
$x =$ _____

8)



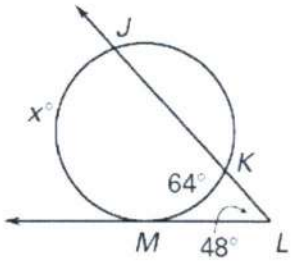
$x =$ _____

9)



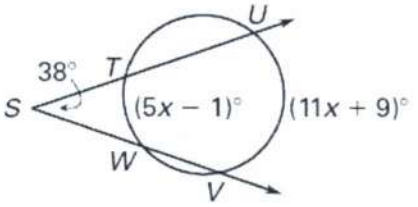
$x =$ _____ $y =$ _____

10)



$x =$ _____

11)



$x =$ _____

For Questions 12 – 17: In $\odot O$, $m\angle 1 = 40°$. Find each measure:

12) $m\overset{\frown}{AD}$ = _____

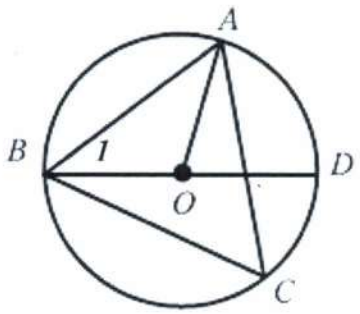
13) $m\angle AOB$ = _____

14) $m\overset{\frown}{AB}$ = _____

15) $m\overset{\frown}{ABD}$ = _____

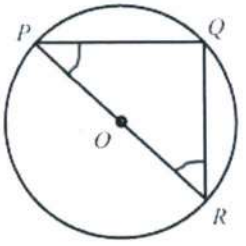
16) $m\angle C$ = _____

17) $m\angle BAO$ = _____



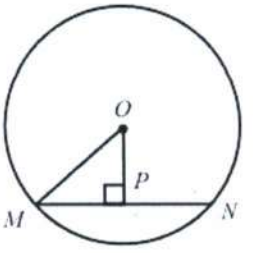
In Questions 18 – 21, O is the center of the circle.

18)



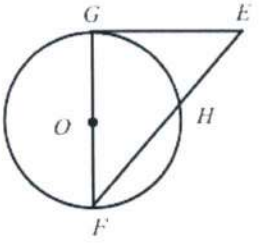
$PQ = 7,\ \angle P \cong \angle R,\ PR = ?$

19)



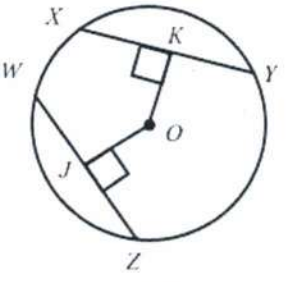
$OM = 29,\ MN = 40,\ OP = ?$

20)



$m\overset{\frown}{GH} = 80°,\ m\angle E = ?$

21)



$OJ = OK = 4,\ WZ = 10,\ XY = ?$

PART IV: Measuring Length and Area

Chapter 11: Measuring Length and Area

Find the area of each figure:

1) A rectangle with width 5 m and length 13 m : _____

2) A triangle with base 7 cm and height 10 cm : _____

3) An equilateral triangle with side 10: _____

4) A rhombus with diagonals 6 cm and 8 cm: _____

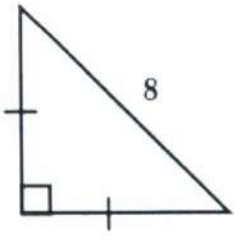
5) A trapezoid with bases 7 and 10, and height 6: _____

6) A regular hexagon with radius 4: _____

7) A circle with radius $5\sqrt{2}$: _____

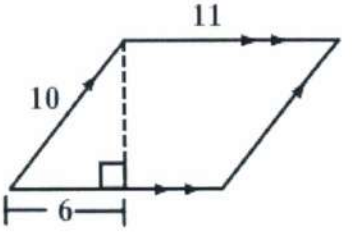
Find the area of each polygon:

8)



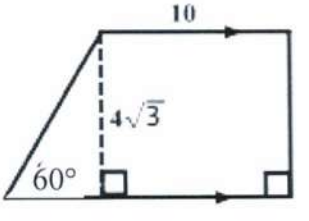
Area = _____

9)



Area = _____

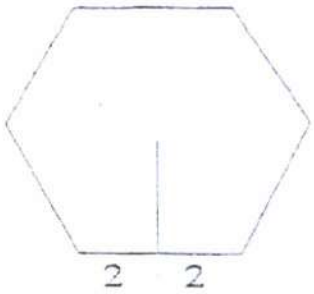
10)



Area = _____

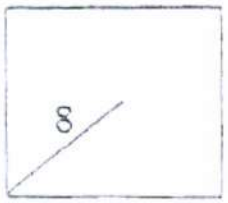
Find the area of the figures below:

11) Regular Hexagon



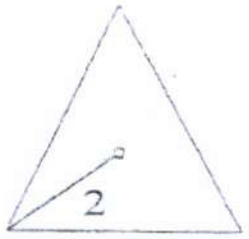
Area = _____

12) Square



Area = _____

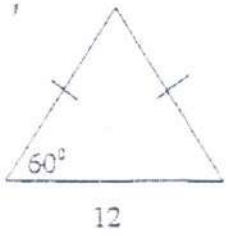
13) Equilateral Triangle



Area = _____

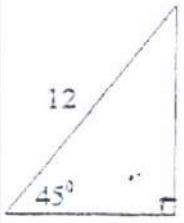
Find the area of the triangles:

14)



Area = _____

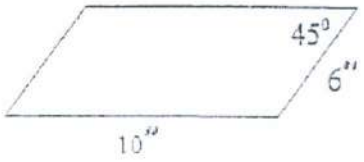
15)



Area = _____

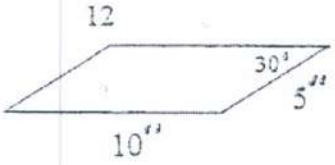
Find the area of the parallelograms:

16)



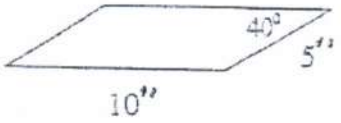
Area = _____

17)



Area = _____

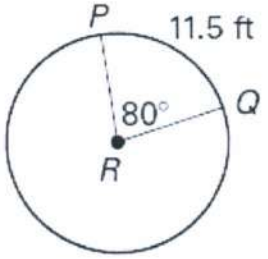
18)



Area = _____

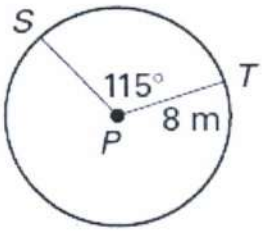
Find the indicated measure:

19)



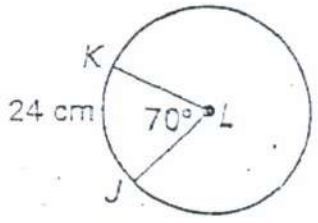
Circumference of $\odot P$ = _____

20)



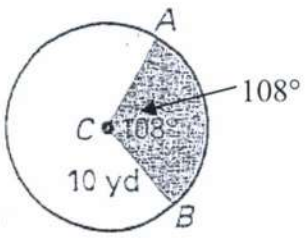
$m\overset{\frown}{ST}$ = _____

21)



Circumference of $\odot L$ = _____

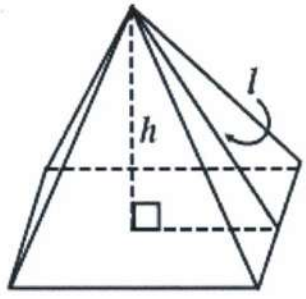
22)



Area of sector ACB = _____

PART V: Surface Area and Volume of Solids **Chapter 12: S. A. and Volume of Solids**

Complete the table for the regular square pyramid shown.



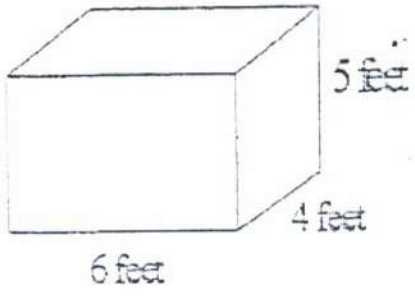
	Base Edge	Lateral Edge	l	h	*L.A.*	*T.A.*	V
1)	18	15					
2)			$5\sqrt{2}$	5			

Complete the table for a cylinder with dimensions r and h.

	r	h	*L.A.*	*T.A.*	V
3)	3	5			
4)	4		24π		

Find the volume and surface area of the prisms and cylinder:

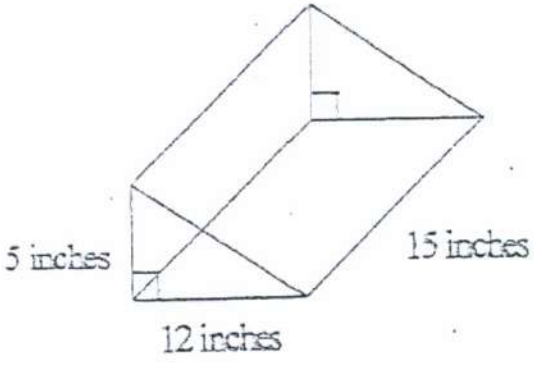
5)



Volume = _____

Surface Area = _____

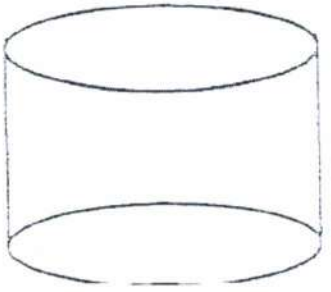
6)



Volume = _____

Surface Area = _____

7)



Cylinder:

Radius: 4"

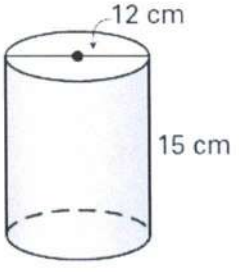
Height: 10"

Volume = _____

Surface Area = _____

Find the surface area and volume of the figure. Round your answers to two decimal places, if necessary.

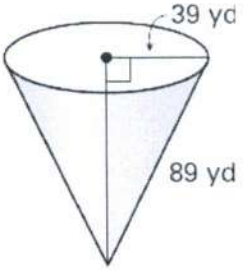
8)



Surface Area: _____

Volume: _____

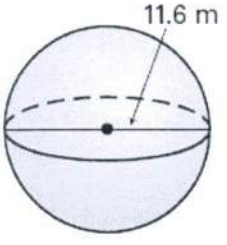
9)



Surface Area: _____

Volume: _____

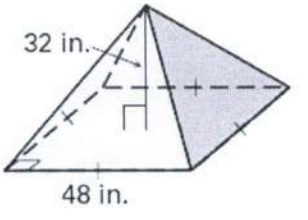
10)



Surface Area: _____

Volume: _____

11)



Surface Area: _____

Volume: _____