NAME_____DATE_____PER._____

GEOMETRY PRE-AP SPRING FINAL EXAM REVIEW

## LAW OF SINES & COSINES

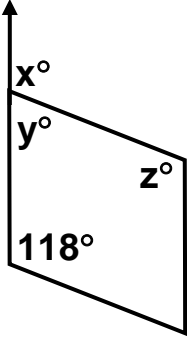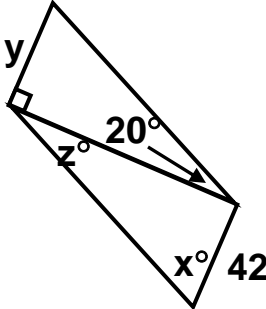|	
$m\angle A =$_____ $a =$_____ $b =$_____	1.Solve the triangle if $\angle B = 15°, \angle C = 113°$, side $b = 49$. Round answers to the nearest whole number.
Law of _____ AC = _____	2. Would you use Law of Sines or Law of Cosines to find the length of $\overline{AC}$? Find the length. Round your answer to the nearest foot. D 78° 15 ft A 36 ft 32 ft C 85° B

QUADRILATERALS
Complete each statement about parallelogram MARK & explain your answer.
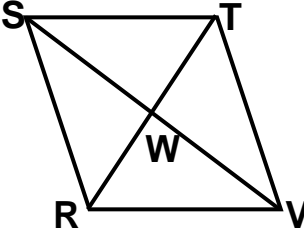
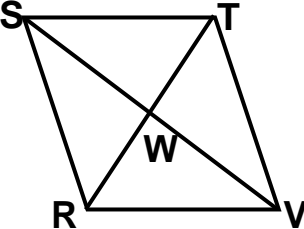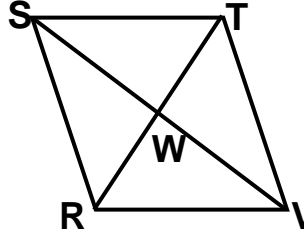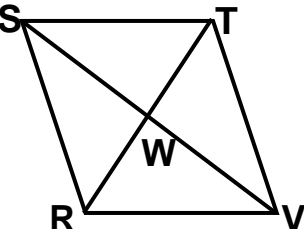|	Why?	
3. ∠MKR ≅ _____	Why?	
4. $\overline{AS} ≅$ _____	Why?	K R S M A
5. ∠ARK and _____ are supplementary.	Why?	
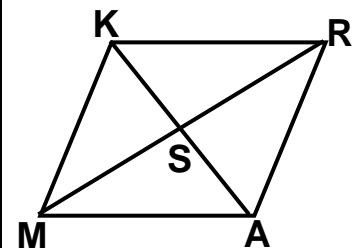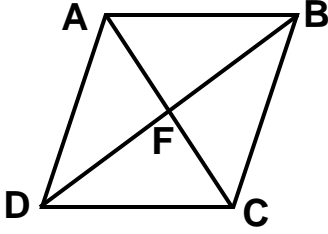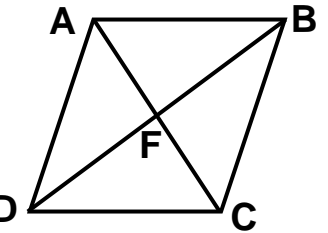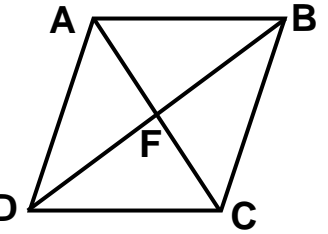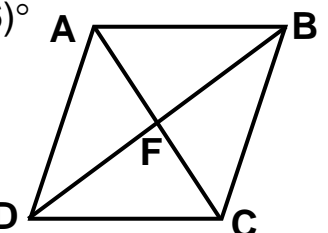
For each parallelogram, find the values of 'x', 'y', and 'z'.

6. x = _____
 	
   y = _____
 	
   z = _____
	x°
	y°
	z°
	118°

7. x = _____
 	
    y = _____
 	
    z = _____
	y
	z° 20°
	x° 42

Use rhombus RSTV and the given information to find each value.
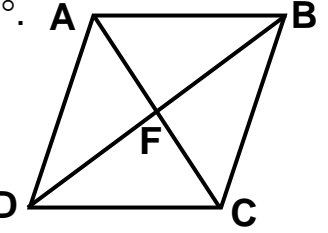
8. m∠RSW =_____	If m∠RST = 67°, find the m∠RSW. S T W R V
9. m∠STV = _____	Find m∠SVT if m∠STV = 135° S T W R V
10. x = _____	If m∠SWT = (2x + 8)°, find the value of 'x'. S T W R V
11. x = _____	What is the value of 'x' if m∠WRV = (5x + 15)° and m∠WRS = (7x − 19)°? S T W R V
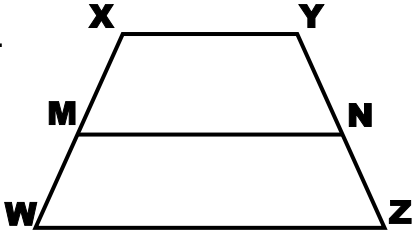
Use rhombus ABCD and the given information to find each value.

12. _____	If m∠BAF = 28°, find m∠ACD.
13. _____	Find the value of 'x' if m∠AFB = (16x + 26)°.
14. _____	If m∠ACD = 34°, find m∠ABC.
15. _____	Find the value of 'x' if m∠BFC = (4x + 6)°.
16. _____	What is the value of 'x' if m∠BAC = (4x + 6)° and m∠ACD = (12x − 18)°?

WXYZ is an isosceles trapezoid with bases $\overline{WZ}$ and $\overline{XY}$ and median $\overline{MN}$. Use the given information to solve each problem.
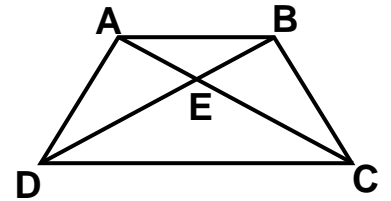
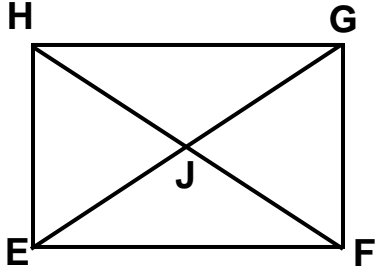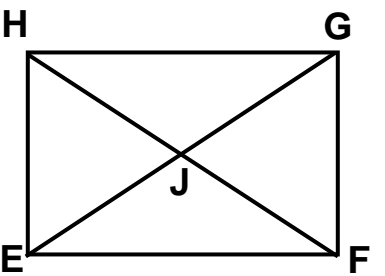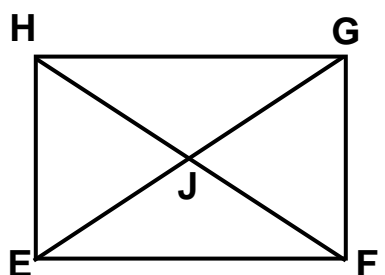|	
17. MN = _____	Find MN if WZ = 11 and XY = 3.
18. XY = _____	If MN = 10 and WZ = 14, find XY.
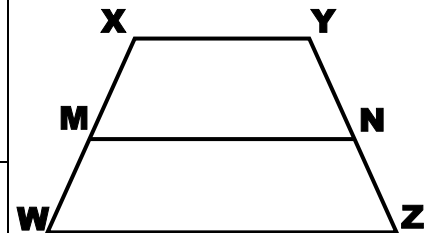
19. x = _____	If MN = 10x + 2, WZ = 21, and XY = 8x +19, find the value of 'x'.	

ABCD is an isosceles trapezoid. Determine if each statement is TRUE or FALSE (circle one) and explain your reasoning.

20. AC = BD TRUE or FALSE	Explain:	
21. $\overline{AD} \cong \overline{CB}$ TRUE or FALSE	Explain:	
22. $\overline{CA}$ and $\overline{BD}$ bisect each other. TRUE or FALSE	Explain:	
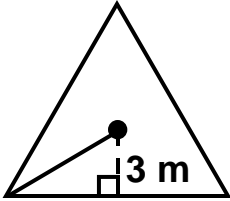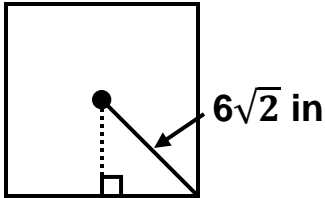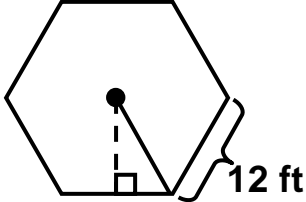
Quadrilateral EFGH is a rectangle. Find the value of 'x'.

23. x = _____	m∠HEG = (12x + 1)° and m∠GEF = (6x – 1)°	
24. x = _____	HF = 5x – 4 and EG = 6x – 10	
25. x = _____	JF = 8x + 4 and EG = 24x – 8	

PERIMETER & AREA OF POLYGONS

Find the EXACT area of each <u>regular</u> polygon. Write your final, EXACT answer, with appropriate units, in the blank provided.

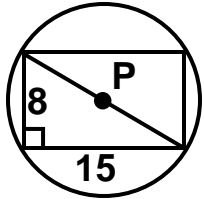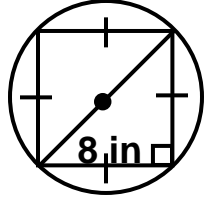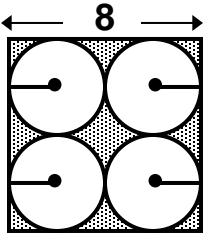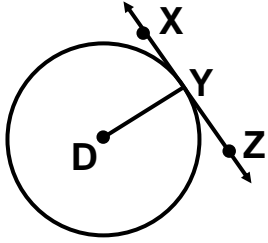|	
26. A = _____	Find the area of the equilateral triangle with the indicated apothem length: 3 m
27. A = _____	Find the area of the regular quadrilateral with the indicated radius: $6\sqrt{2}$ in
28. A = _____	Find the area of the regular polygon with the given side length: **12 ft**
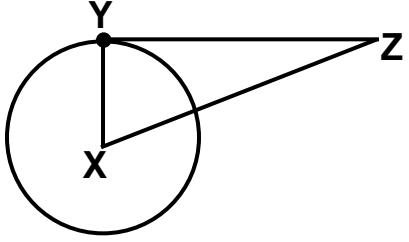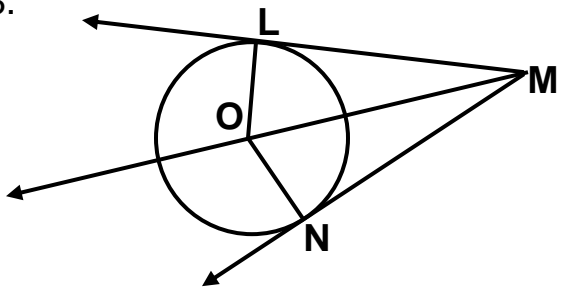
CIRCLE BASICS
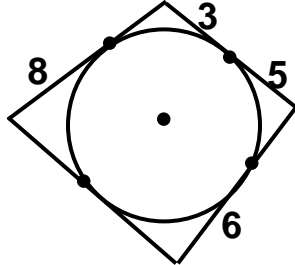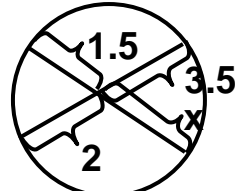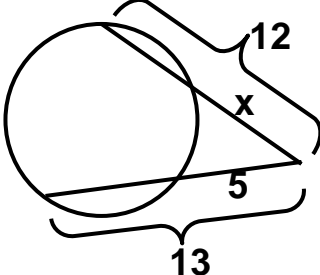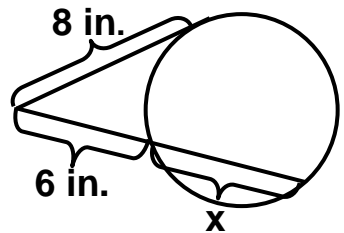
Write the term that best describes the following definitions.

29._____	A segment with both endpoints on the circle.
30._____	A chord that goes through the center of a circle.
31._____	A line or ray that intersects a circle at two points.
32._____	A line or ray that intersects a circle at exactly one point.

Find the EXACT answer for each of the following and write it in the space provided. Leave your answers in simplest form.
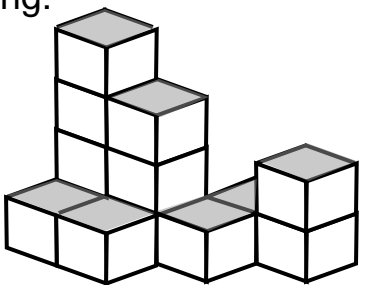
33. _____	In a given circle, the radius is 48 cm. Find the measure of the circle's diameter.
34. _____	In a given circle, the area is 36π. Find the measure of the circles' radius.

35. _____	In a given circle, the diameter is 8 cm. Find the circumference of the circle.
36. _____	Find the area of circle P.
37. _____	Find the area of the circle:
38. _____	Find the EXACT area of the shaded region.
39. _____	$\overleftrightarrow{XZ}$ is a tangent to circle D at Y. $\overline{DY}$ is a radius. Find the measure of $\angle$DYZ.
40. _____	$\overline{ZY}$ is tangent to circle X. $\angle$YXZ = 60°, YZ = $6\sqrt{3}$. Find the length of $\overline{XZ}$.
41. _____	$\overrightarrow{ML}$ and $\overrightarrow{MN}$ are tangent to circle O. LM = 6x + 2 and NM = 38. Find the value of 'x'.

_____42.	Find the perimeter of the quadrilateral. 3 8 5 6
_____43.	Find the value of 'x'. 1.5 3.5 x 2
_____44.	Find the value of 'x'. 12 x 5 13
_____45.	Find the value of 'x'. 8 in. 6 in. x
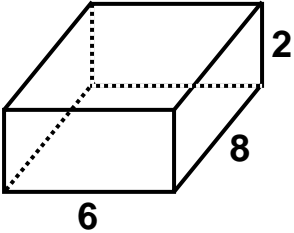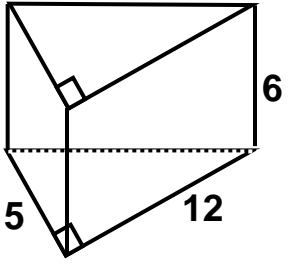
PRISMS & PYRAMIDS
Draw the indicated views for the isometric drawing below.

Isometric Drawing: **Front**	46. Top View:
47. Left View:	48. Front View:

Draw a net that would produce the indicated three-dimensional figure.

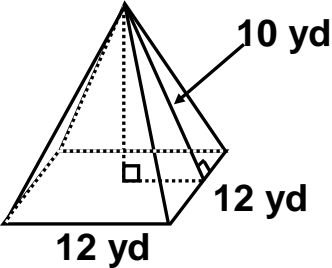| 49. Triangular Prism:	50. Hexagonal Prism:

Find the indicated measure for each of the prism described below.

51. V = _____	
52. V = _____	Find the volume of a cube with a base edge of 3 cm.
53. TA = _____	Find the Total Area of the right triangular prism.
54. V = _____	The volume of a rectangular prism is 64 cubic feet. If one dimension were reduced to one-sixteenth it original length, a second dimension were doubled, and a third dimension remained unchanged, what would be its new volume?

Draw a net that would form the indicated three-dimensional object.

55. Square Pyramid:	56. Pentagonal Pyramid:

Find the indicated measure for each of the following pyramids. Leave answers EXACT and in simplest form.
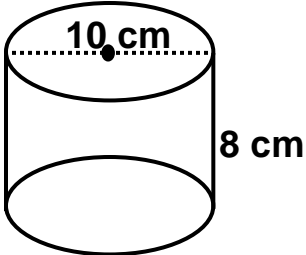
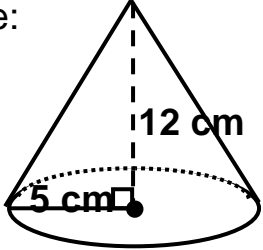|	
57. LA = _____	Find the Lateral Area of the square pyramid. 10 yd 12 yd 12 yd
58. V = _____	Find the Volume of the square pyramid from #65.

Find the correct answer for each of the following. Write your final answer, with corresponding units, in the blank provided.

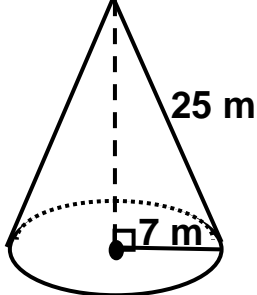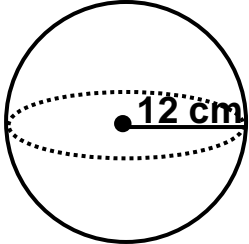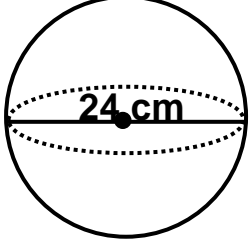|	
59. V = _____	The Volume of a rectangular pyramid is 192 cubic units. If its dimensions are reduced to one-fourth their original length. What is the Volume of the smaller pyramid?
60. Factor = _____	If the dimensions of a pyramid were increased to three-halves their original length, by what factor would you multiply the original area to obtain the area of the larger pyramid?

CYLINDERS, CONES, & SPHERES
Find the correct answer for each of the following.   Write your final, EXACT answer, with its corresponding units, in the blank provided.
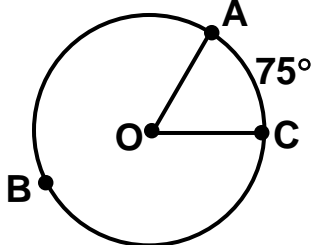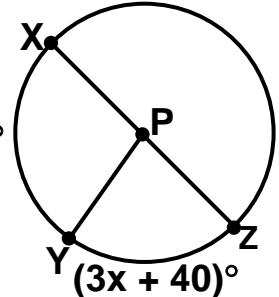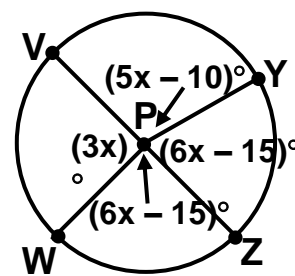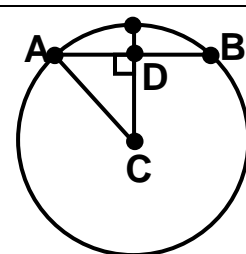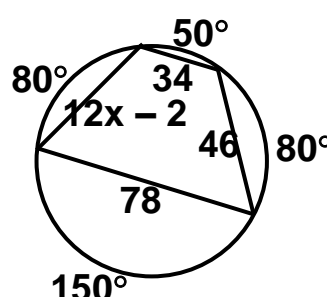
_____61.	Find the Volume of the cylinder: 10 cm 8 cm
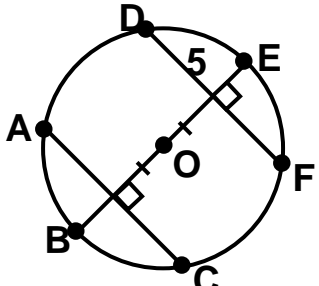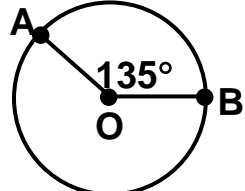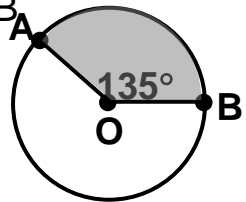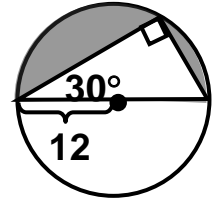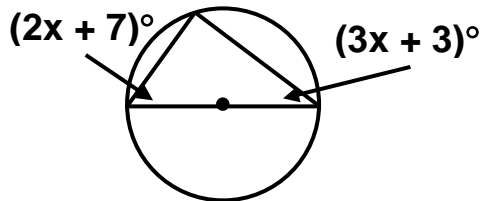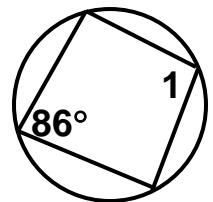
_____62.	The Lateral Area of a right circular cylinder is 60π square meters. The height is 12 m. Find the diameter of the base.	
_____63.	Find the Lateral Area of the right circular cone:	12 cm 5 cm
_____64.	Find the Volume of the right circular cone:	25 m 7 m
_____65.	The Volume of a right circular cone is 72π cubic centimeters, and its height is 2 cm. Find the length of the radius.	
_____66.	Find the Total Area of the sphere:	12 cm
_____67.	Find the Volume of the sphere:	24 cm
_____68.	The Total Area of a sphere is 144π square centimeters. Find its diameter.	

_____69.	The Volume of a cylinder is 120π m³. If it's dimensions are reduced to one-half their original length, what would its new Volume be?

ARCS, CIRCLES, & ANGLES
Write your final answer in the blank provided. Leave answers as EXACT.

_____70.	In the diagram the measure of $\overset{\frown}{ABC}$ = ? A, 75°, O, C, B
_____71.	Given that $\overline{XZ}$ is a diameter, find $\overset{\frown}{YZ}$. X, (4x +21)°, P, Y, (3x + 40)°, Z
_____72.	Find the m∠VPY. V, (5x – 10)° Y, P, (3x)°, (6x – 15)°, (6x – 15)°, W, Z
_____73.	If AC = 13 and CD = 5, then find AB. A, D, B, C
_____74.	Find the value of 'x'. 50°, 80°, 34, 12x – 2, 46, 80°, 78, 150°

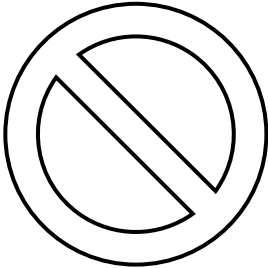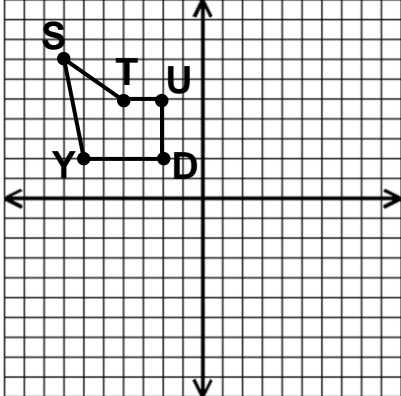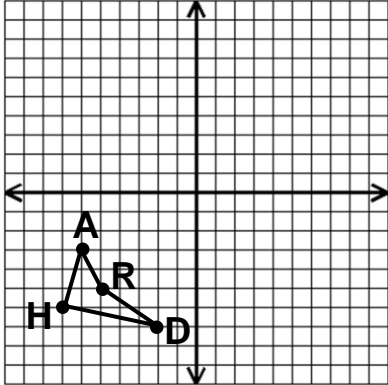|	
_____75.	Find AC.
_____76.	If r = 6 cm, find the EXACT length of $\widehat{AB}$.
_____77.	If r = 6 cm, find the EXACT area of sector AOB
_____78.	Find the EXACT area of the shaded region.
_____79.	Find the value of 'x'. (2x + 7)° (3x + 3)°
_____80.	Find the measure of ∠1. 86°

Use for problems 81 - 87. F and B are points of tangency.
$m\widehat{AB} = 50°$, $m\widehat{CD} = 85°$, $m\widehat{AF} = 36°$, and $m\widehat{ED} = 79°$. $\overline{AD}$ is a diameter.

_____81.	Find $m\widehat{BC}$.
_____82.	Find $m\widehat{EF}$.

_____83.	Find m∠1.	_____84.	Find m∠2.
_____85.	Find m∠3.	_____86.	Find m∠4.
_____87.	Find m∠5.		

TRANSFORMATIONS. Map the image and give the new coordinates

88. F'(_____ , _____)

   I'(_____ , _____)

   N'(_____ , _____)

   A'(_____ , _____)

   L'(_____ , _____)

Reflect the image below across the y-axis and write the coordinates of the vertices of the new polygon.

89. ____ lines of symmetry	Draw the line(s) of symmetry for the object, then write how many total lines of symmetry it has in the blank at left.
90. S'(_____, _____) T'(_____, _____) U'(_____, _____) D'(_____, _____) Y'(_____, _____)	Translate the polygon according to the ordered pair translation, then state the coordinates of the new polygon. $(x + 7, y - 8)$
91. H'(_____, _____) A'(_____, _____) R'(_____, _____) D'(_____, _____)	Rotate the figure below 180°, then state the new coordinates of its vertices.
92. N'(_____, _____) D'(_____, _____)	Dilate the figure below using E as your center and a scale factor of 3.