

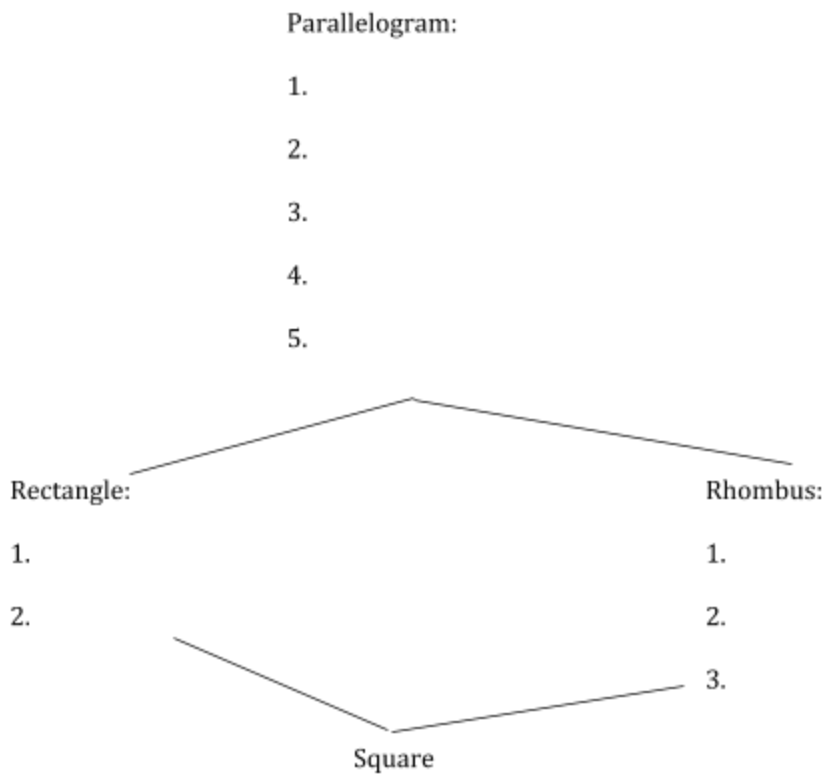
Name: _____

Date: _____

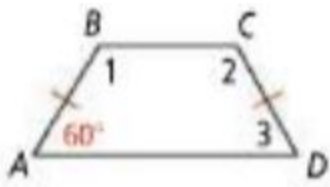
Period: _____

Geometry Final Exam Review

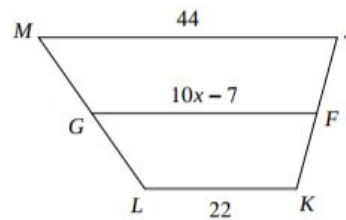
1. Fill in the flow chart below with the properties that belong to each polygon.



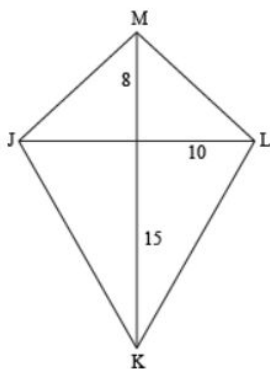
2. Find the measure of each numbered angle:



3. Find the value of x

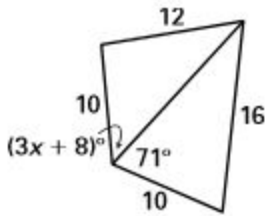


4. Calculate the perimeter of the kite below:

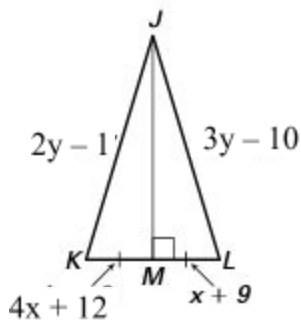


5. A triangle has one side of length 10 and another of length 6. Describe the possible lengths of the third side.

6. Use the Hinge Theorem or its converse and properties of triangles to write and solve an inequality to describe a restriction on the value of x .



3. Find the value of x and y . Then find the following lengths: JK, KM, KL, JM



x : _____

y : _____

JK: _____

KM: _____

KL: _____

JM: _____

4. Solve the proportion for x.

a). $\frac{30}{5} = \frac{14}{x}$

b). $\frac{4}{x-3} = \frac{8}{x}$

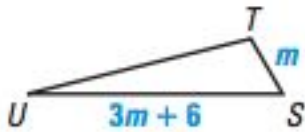
c). $\frac{3x-8}{6} = 2\frac{x}{10}$

x = _____

x = _____

x = _____

6. The ratio of SU: ST is 4:1, solve for m.



m = _____

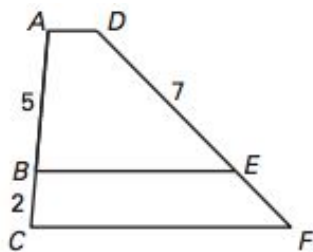
7. Find the geometric mean of the two numbers, write answers as simplified radicals.

a). 4 and 25

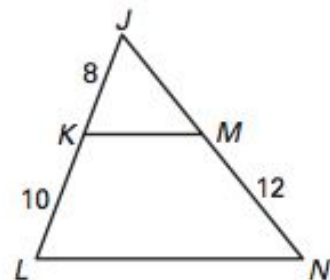
b). 3 and 16

8. Use the diagram to find the unknown length.

a). $\frac{AB}{AC} = \frac{DE}{DF}$. Find EF



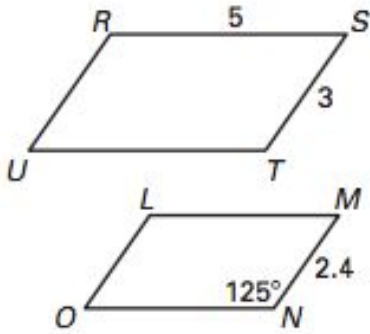
b). $\frac{JK}{KL} = \frac{JM}{MN}$. Find JN



EF = _____

JN = _____

9. Use the diagram below. $\square RSTU \sim \square LMNO$.



a). Find the scale factor of $\square RSTU \sim \square LMNO$. _____

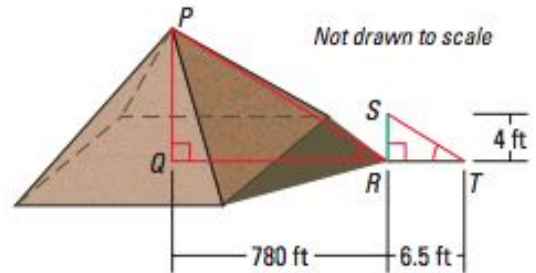
b). Find the length of \overline{NO} . _____

c). Find the measure of $\angle U$. _____

d). Find the perimeter of $\square LMNO$. _____

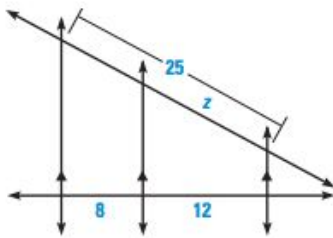
e). Find the perimeter of $\square RSTU$ to the perimeter of $\square LMNO$. _____

10. The Greek mathematician Thales (640-546 B.C.) calculated the height of the Great Pyramid in Egypt by placing a rod at the tip of the pyramid's shadow and using similar triangles. Find the height of the Great Pyramid.



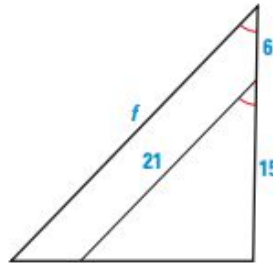
11. Find the value of the variable.

a).



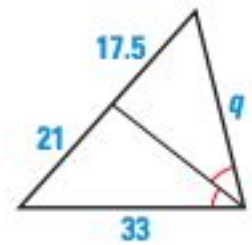
$z =$ _____

b).



$t =$ _____

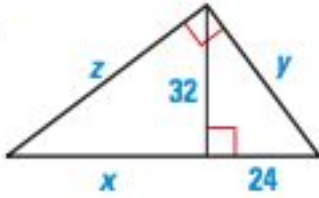
c).



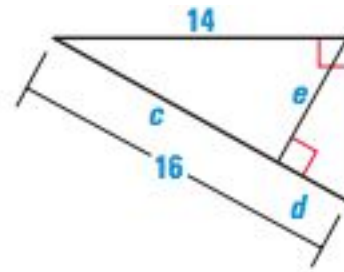
$q =$ _____

12. Find the value of each variable.

a).



b).

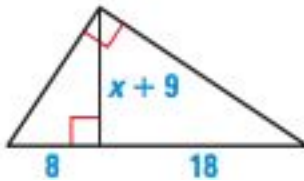


$x = \underline{\hspace{2cm}}$ $y = \underline{\hspace{2cm}}$ $z = \underline{\hspace{2cm}}$

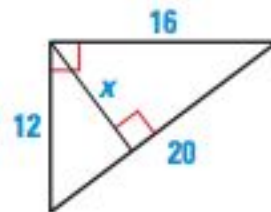
$c = \underline{\hspace{2cm}}$ $d = \underline{\hspace{2cm}}$ $e = \underline{\hspace{2cm}}$

13. Find the value of x. Simplify answers that are radicals.

a).



b).



$x = \underline{\hspace{2cm}}$

$x = \underline{\hspace{2cm}}$

14. Decide whether the numbers can represent the side lengths of a triangle. If they can, classify the triangle as acute, right, or obtuse.

a). 5, 12, 13

b). 20, 21, 28

c). $\sqrt{8}$, 4, 6

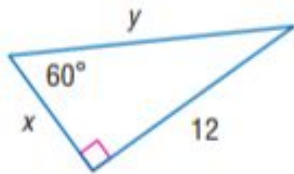
d). 10, $\sqrt{13}$, 12

Triangle: _____ Triangle: _____ Triangle: _____ Triangle: _____

Classify: _____ Classify: _____ Classify: _____ Classify: _____

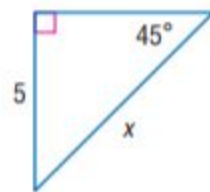
15. Find the value of each variable. Write answers in simplest radical form.

a).



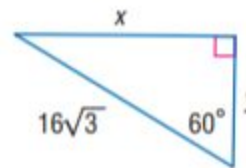
$x =$ _____ $y =$ _____

b).



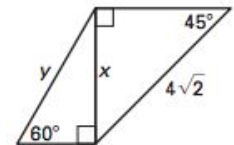
$x =$ _____

c).



$x =$ _____ $y =$ _____

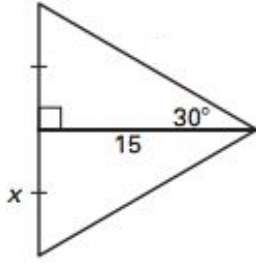
d).



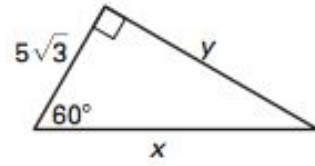
$x =$ _____ $y =$ _____

16. Find the area of the triangle. Round decimals to the nearest tenth.

a).



b).

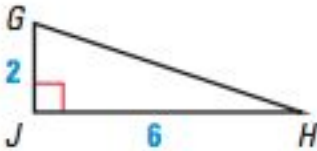


A = _____

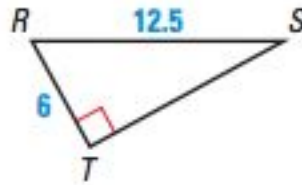
A = _____

17. Solve the right triangle. Round decimals to the nearest tenth.

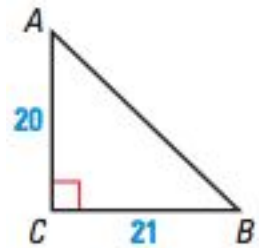
a).



b).



c).



GH = _____

ST = _____

AB = _____

$\angle G =$ _____

$\angle R =$ _____

$\angle A =$ _____

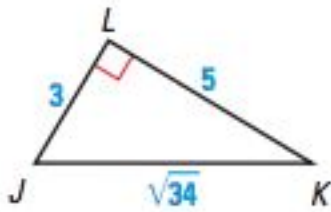
$\angle H =$ _____

$\angle S =$ _____

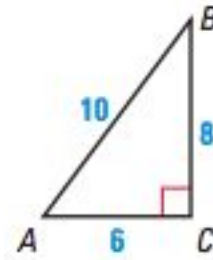
$\angle B =$ _____

18. Find the sine, cosine, and the tangent of the acute angles of the triangle. Express each value as a decimal rounded to four places.

a).



b).



$\sin J = \underline{\hspace{2cm}}$ $\sin K = \underline{\hspace{2cm}}$ $\sin A = \underline{\hspace{2cm}}$ $\sin B = \underline{\hspace{2cm}}$

$\cos J = \underline{\hspace{2cm}}$ $\cos K = \underline{\hspace{2cm}}$ $\cos A = \underline{\hspace{2cm}}$ $\cos B = \underline{\hspace{2cm}}$

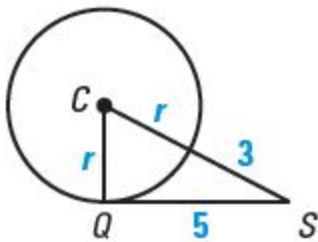
$\tan J = \underline{\hspace{2cm}}$ $\tan K = \underline{\hspace{2cm}}$ $\tan A = \underline{\hspace{2cm}}$ $\tan B = \underline{\hspace{2cm}}$

19. The altitude of an equilateral triangle is 12 centimeters. Find the perimeter of the triangle.

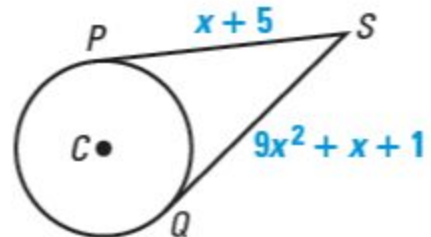
20. The hypotenuse of an isosceles right triangle is 16 centimeters. Find the area of the triangle.

21. Find the value(s) of the variable given that P, Q, and R are points of tangency.

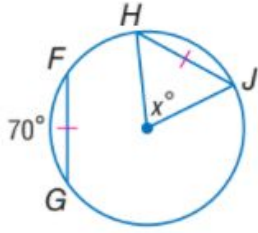
a).



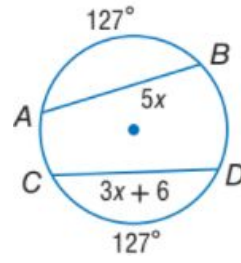
b).



c).

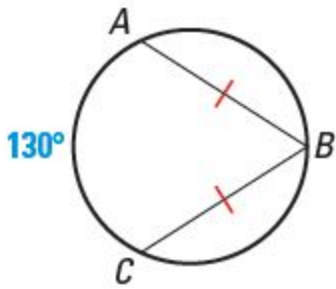


d).

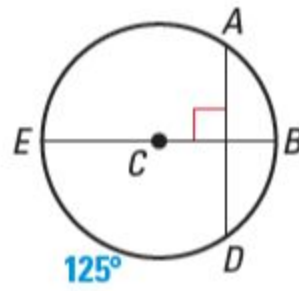


22. Find the measure of \widehat{AB} .

a).

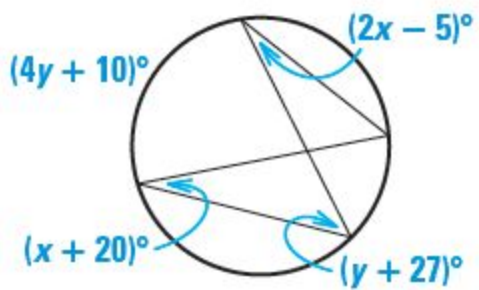


b).

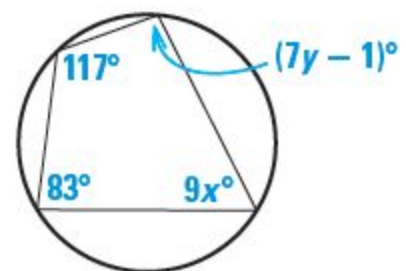


23. Find the values of the variables.

a).

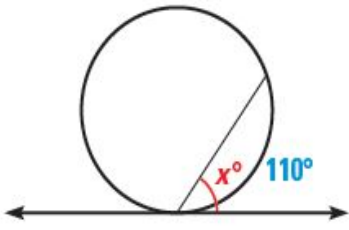


b).

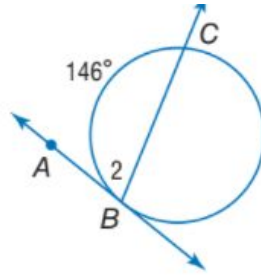


24. Find the value of x unless otherwise stated.

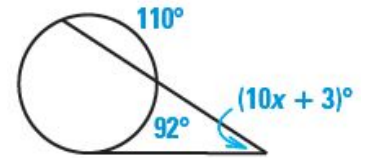
a).



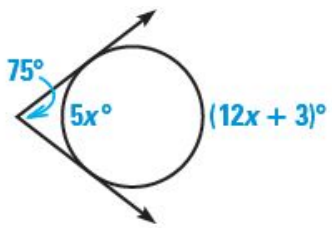
b). Find the $m\angle 2$



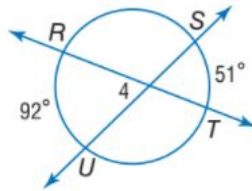
c).



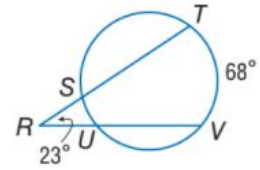
d).



e). Find the $m\angle 4$

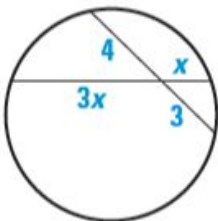


f). Find the $m\widehat{SU}$

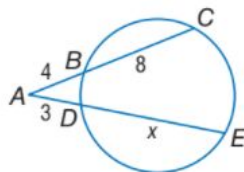


25. Find the value of x .

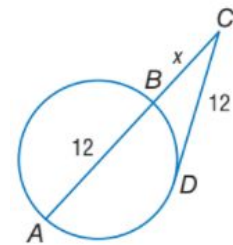
a).



b).



c).



26. What is the center and radius of a circle with equation $(x + 7)^2 + (y - 11)^2 = 144$

Chapter 11: Area of Polygons and Circles

a) Circumference Formula:

b) Area Formula:

c) Arc Length Formula:

d) Area of a Sector Formula:

27. Find the sum of the measures of the interior angles of the indicated convex polygon.

a) Dodecagon

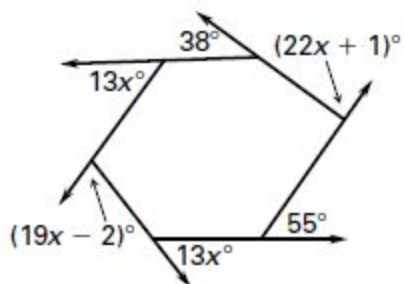
b) 24-gon

28. Find the value of n for each regular n -gon described.

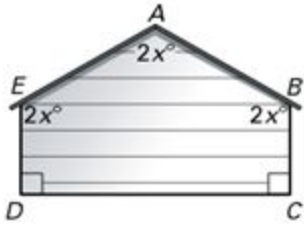
a) Each interior angle of the regular n -gon has a measure of 162° .

b) Each exterior angle of the regular n -gon has a measure of 5° .

29. Find the value of x , and the measure of the missing angles.



30. The side view of a storage shed is shown below. Find the value of x . Then determine the measure of each angle.

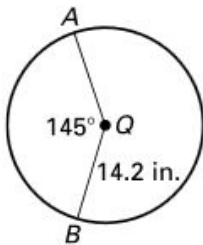


31. Find the circumference of the circle with an area of $64\pi \text{ mi}^2$

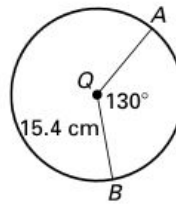
32. Find the area of a circle with circumference of 6π yards.

33. Find the length of \overline{AB} .

a)

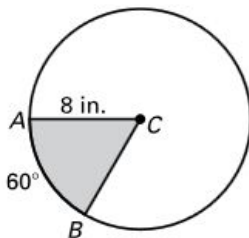


b)

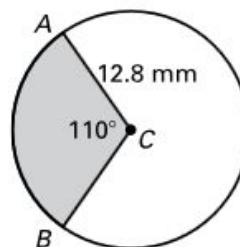


34. Find the area and perimeter of the shaded regions.

a)

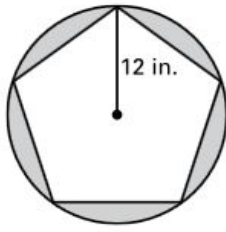


b)

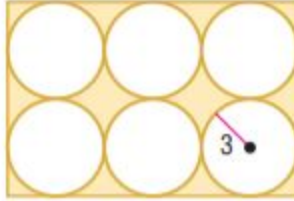


35. Find the area of the shaded regions.

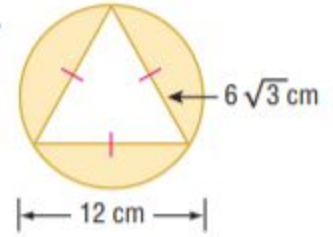
a).



b).

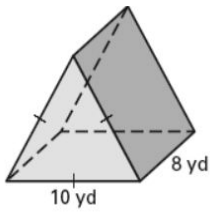


c).

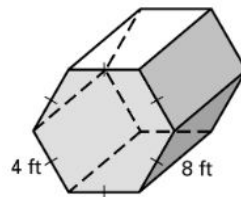


36. Find the volume, lateral area, and surface area of each solid.

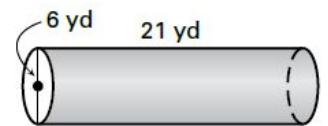
a)



b)

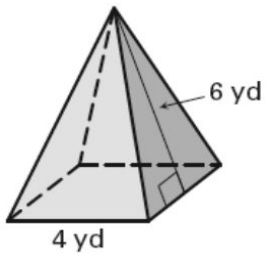


c).

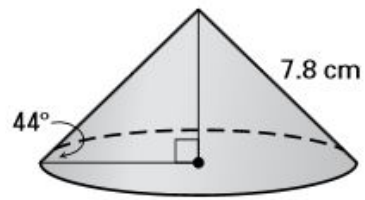


37. Find the volume, lateral area, and surface area of each solid.

a)

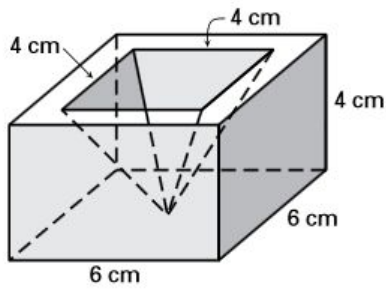


b)

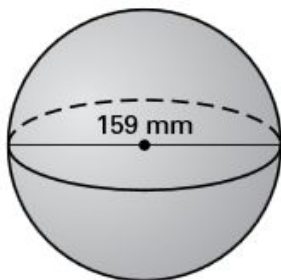


38. Find the volume of the solid. The prisms, pyramids, and cones are right.

a).



39. Find the volume and surface area of the sphere.



40. **Storage Tank** A grain storage tank is in the shape of a cylinder covered by a half sphere as shown. The height of the cylinder is 50 feet and its diameter is 80 feet. Find the total surface area (including the base) and volume of the tank.

