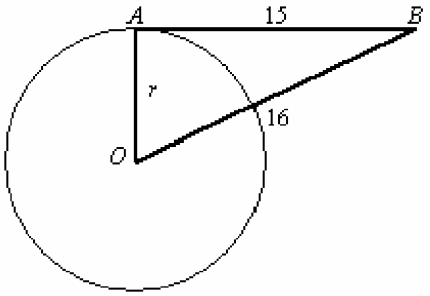
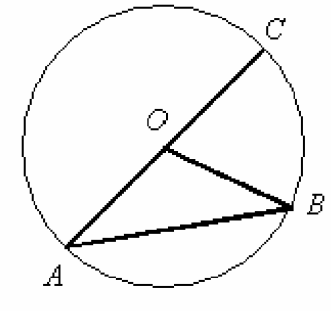
Name: _____ **Class:** _____ **Date:** _____ **ID: A**

Geometry Mastery Test #10 Review

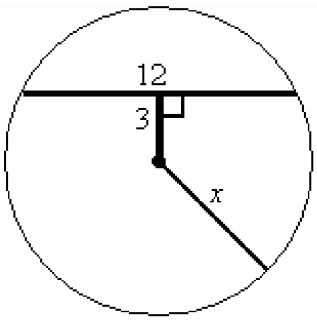
1. You are standing at point B. Point B is 16 feet from the center of the circular water storage tank and 15 feet from point A. $\overline{AB}$ is tangent to $\odot O$ at A. Find the radius of the tank.



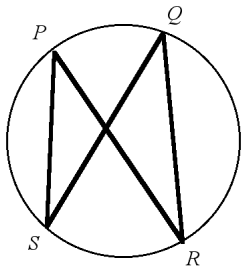
2. Given: In $\odot O$, $m\overset{\frown}{BAC} = 290°$. Find $m\angle B$.



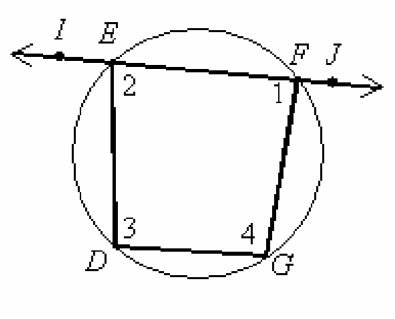
3. Find the value of x.



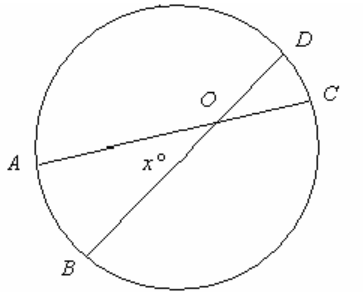
4. Find $m\angle PSQ$ if $m\angle PSQ = 3y - 15$ and $m\angle PRQ = 2y + 25$.



5. Given: $m\angle IED = 116°$ and $m\angle JFG = 100°$
Find the measure of each unknown angle. (not drawn to scale)



Use the diagram (not draw to scale) and the given information.

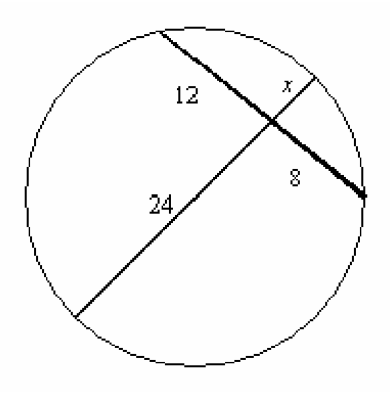


6. Find the value of x if $m\overset{\frown}{AB} = 20°$ and $m\overset{\frown}{CD} = 62°$.

7. Find the value of x if $m\overset{\frown}{AB} = 59°$ and $m\overset{\frown}{CD} = 47°$.

Find the value of x.

8.



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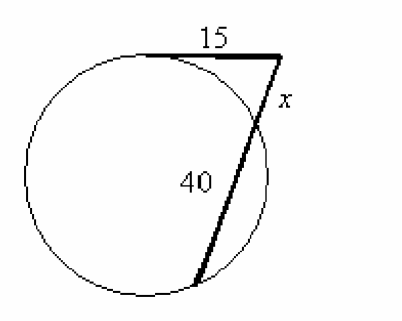
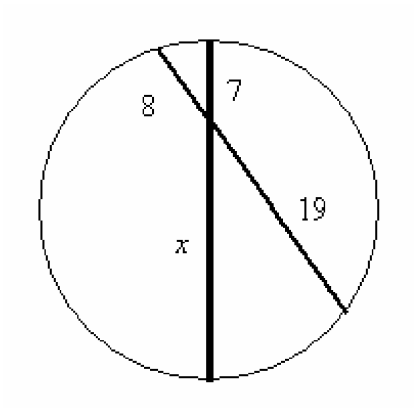


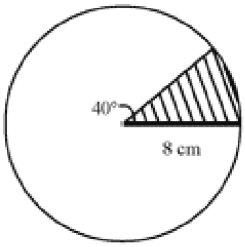
10.



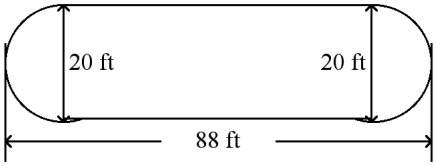
11. Write the standard equation of a circle with its center at the origin and radius 3.

12. Write the standard equation of a circle with center (–3, –4) and radius 6.

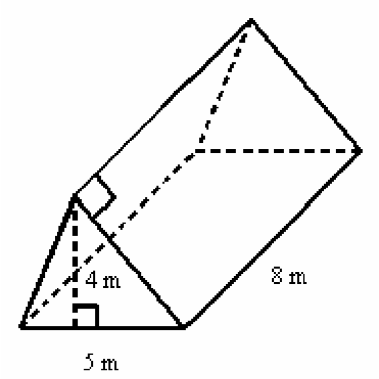
13. Find the area of the shaded region.



14. The figure below represents an oval track. The rounded portions of the track are semicircles. What is the length of the track?



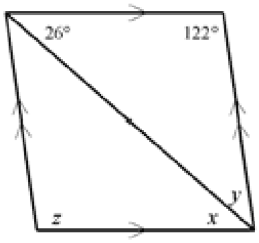
15. Find the volume of the right triangular prism.



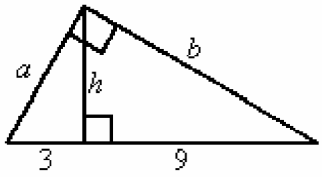
16. Find the volume of a sphere 6 ft in diameter. Use $\pi \approx 3.14$ and round your answer to the nearest tenth.

17. Find the measure of each exterior angle of a regular polygon with 24 sides.

18. Find the value of the variables in the parallelogram.

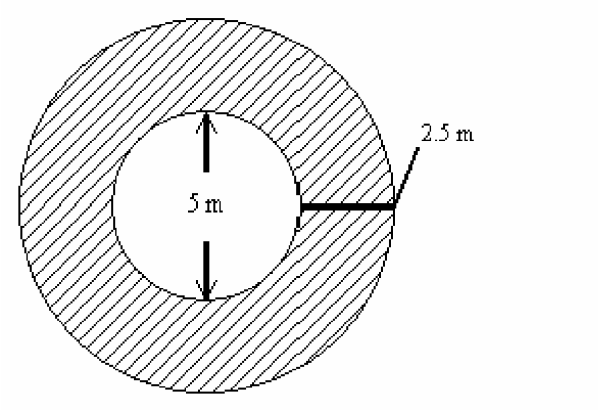


19. Find a, b, and h.



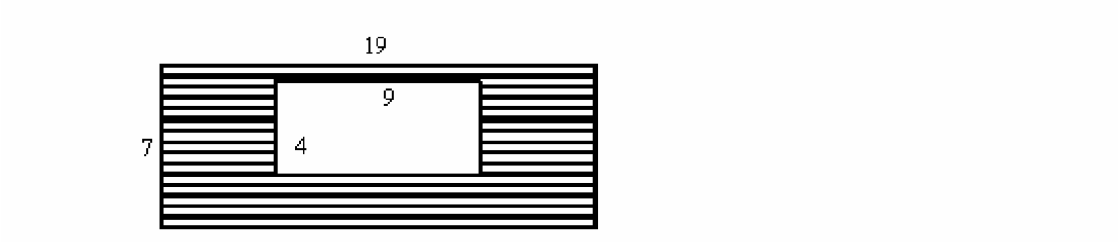
20. Find the number of sides of a convex polygon if the measures of its interior angles have a sum of 2340°.

21. The figure below represents the overhead view of a deck surrounding a hot tub. What is the area of the deck? Use $\pi \approx 3.14$.



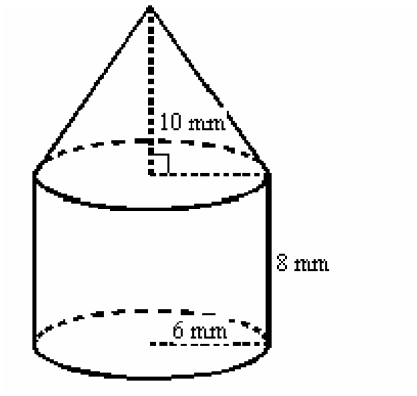
22. Johannas is building a square sandbox with sides 3 feet long. He wants to put sand 1.05 feet deep in the box. How many cubic feet of sand should Johannas order?

23. If a point is selected at random, what is the probability that it will lie within the shaded rectangular region rather than the unshaded rectangular region?



Find the volume of the figure to the nearest tenth.

24.

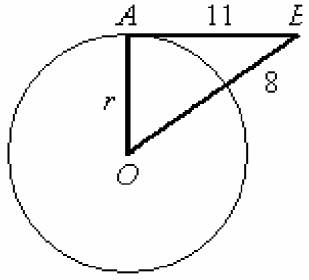


25. Find the diameter of a sphere that has a surface area of 169π in^2.

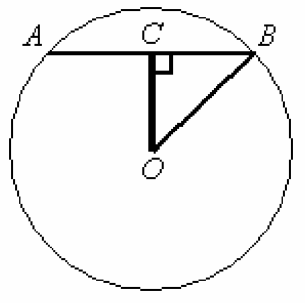
26. A company has a spherical storage tank which is in need of painting. The radius of the tank is 35.4 ft. The type of paint used will cover approximately 160 ft^2 per gallon. How many gallons of paint will be needed? (Round decimal to the higher whole number of gallons.)

27. The surface areas of two similar solids are 54 m^2 and 726 m^2. The volume of the larger one is 1331 m^3. What is the volume of the smaller one?

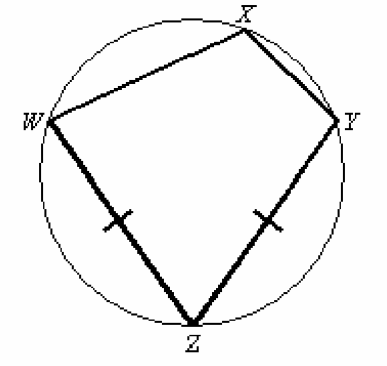
28. $\overline{AB}$ is tangent to $\odot O$ at A (not drawn to scale). Find the length of the radius r, to the nearest tenth.



29. Given circle O with radius 5 and $OC = 3$. Find the length of $\overline{AB}$.



30. Given: $m\angle X = 110°$; $\overline{WZ} \cong \overline{YZ}$; $m\angle Y = 100°$



Refer to the diagram to find the measure of each of the following:

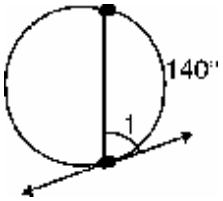
a. $\angle Z$

b. $\overset{\frown}{WZ}$

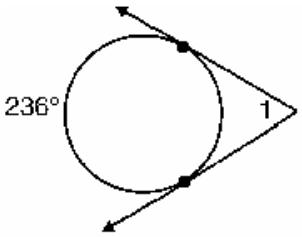
c. $\angle W$

d. $\overset{\frown}{WX}$

31. Find the measure of $\angle 1$.



32. Find the measure of $\angle 1$.



Geometry Mastery Test #10 Review
Answer Section

SHORT ANSWER

1. ANS:
5.6 ft.

TOP: Lesson 10.1 Use Properties of Tangents

2. ANS:
35°

TOP: Lesson 10.2 Find Arc Measures

3. ANS:
6.7

TOP: Lesson 10.3 Apply Properties of Chords

4. ANS:
105°

TOP: Lesson 10.4 Use Inscribed Angles and Polygons

5. ANS:
$m\angle 1 = 80°, m\angle 2 = 64°, m\angle 3 = 100°, m\angle 4 = 116°$

TOP: Lesson 10.4 Use Inscribed Angles and Polygons

6. ANS:
41°

TOP: Lesson 10.5 Apply Other Angle Relationships in Circles

7. ANS:
53°

TOP: Lesson 10.5 Apply Other Angle Relationships in Circles

8. ANS:
4

TOP: Lesson 10.6 Find Segment Lengths in Circles

9. ANS:
5

TOP: Lesson 10.6 Find Segment Lengths in Circles

10. ANS:
$21\frac{5}{7}$

TOP: Lesson 10.6 Find Segment Lengths in Circles

11. ANS:
$x^2 + y^2 = 9$

TOP: Lesson 10.7 Write and Graph Equations of Circles

12. ANS:
$(x+3)^2 + (y+4)^2 = 36$

TOP: Lesson 10.7 Write and Graph Equations of Circles

13. ANS:
22.34 cm^2

TOP: Lesson 11.1 Circumference and Arc Length

14. ANS:
$(136 + 20\pi)$ ft

TOP: Lesson 11.1 Circumference and Arc Length

15. ANS:
80 m^3

TOP: Lesson 11.6 Volume of Prisms and Cylinders

16. ANS:
113.0 ft^3

TOP: Lesson 11.8 Surface Area and Volume of Spheres

17. ANS:
$15°$

TOP: Lesson 8.1 Find Angle Measures in Polygons

18. ANS:
$x = 26°,\ y = 32°,\ z = 122°$

TOP: Lesson 8.2 Use Properties of Parallelograms

19. ANS:
$a = 6,\ b = 6\sqrt{3},\ h = 3\sqrt{3}$

TOP: Lesson 7.3 Use Similar Right Triangles

20. ANS:
15

TOP: Lesson 8.1 Find Angle Measures in Polygons

21. ANS:
58.875 m^2

TOP: Lesson 11.2 Areas of Circles and Sectors

22. ANS:
9.45 ft^3

TOP: Lesson 11.6 Volume of Prisms and Cylinders

23. ANS:
$\frac{97}{133}$

TOP: Lesson 11.4 Use Geometric Probability

24. ANS:
1281.8 mm^3

TOP: Lesson 11.7 Volumes of Pyramids and Cones

25. ANS:
13 in.

TOP: Lesson 11.8 Surface Area and Volume of Spheres

26. ANS:
99 gallons

TOP: Lesson 11.8 Surface Area and Volume of Spheres

27. ANS:
27 m^3

TOP: Lesson 11.9 Explore Similar Solids

28. ANS:
3.6

TOP: Lesson 10.1 Use Properties of Tangents

29. ANS:
8

TOP: Lesson 10.3 Apply Properties of Chords

30. ANS:

a. $m\angle Z = 70°$ b. $m\overset{\frown}{WZ} = 110°$ c. $m\angle W = 80°$ d. $m\overset{\frown}{WX} = 90°$

TOP: Lesson 10.4 Use Inscribed Angles and Polygons

31. ANS:
70°

TOP: Lesson 10.5 Apply Other Angle Relationships in Circles

32. ANS:
56°

TOP: Lesson 10.5 Apply Other Angle Relationships in Circles