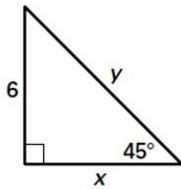


**Final Exam Review**

1. **Multiple Choice** Find the values of  $x$  and  $y$ .

- (A)  $x = 6, y = 6\sqrt{3}$
- (B)  $x = 3\sqrt{2}, y = 6\sqrt{2}$
- (C)  $x = 2\sqrt{3}, y = 4\sqrt{3}$
- (D)  $x = 6, y = 6\sqrt{2}$
- (E)  $x = 6\sqrt{2}, y = 6$

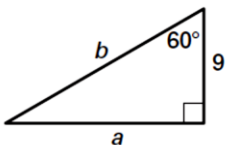


2. **Multiple Choice** The ratio of the lengths of two equilateral triangles is 4:9. What is the ratio of their areas?

- (A) 4:9
- (B) 9:4
- (C) 2:3
- (D) 16:81
- (E) 81:16

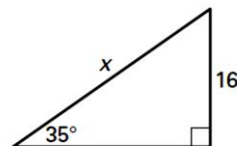
3. **Multiple Choice** Find the values of  $a$  and  $b$ .

- (A)  $a = 9, b = 9\sqrt{2}$
- (B)  $a = 18, b = 9\sqrt{3}$
- (C)  $a = 9\sqrt{3}, b = 18$
- (D)  $a = 3\sqrt{3}, b = 6\sqrt{3}$
- (E)  $a = 6\sqrt{3}, b = 3\sqrt{3}$



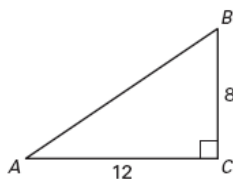
4. **Multiple Choice** Find the value of  $x$ .

- (A)  $16 \sin 35^\circ$
- (B)  $16 \cos 35^\circ$
- (C)  $\frac{\sin 35^\circ}{16}$
- (D)  $\frac{16}{\sin 35^\circ}$
- (E)  $16 \tan 35^\circ$



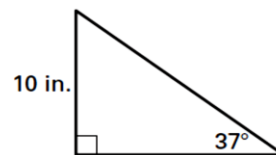
5. In the diagram below, what is the measure of  $\angle A$  to the nearest tenth of a degree?

- (A)  $41.8^\circ$
- (B)  $48.2^\circ$
- (C)  $33.7^\circ$
- (D)  $1^\circ$
- (E)  $42^\circ$



6. **Multiple Choice** Find the perimeter of the triangle. Round to the nearest tenth.

- (A) 42.2 in.
- (B) 39.9 in.
- (C) 37.2 in.
- (D) 39.1 in.
- (E) 33.1 in.



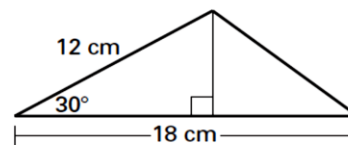
7. **Multiple Choice** Find the area of the figure. Round to the nearest tenth if necessary.

- (A)  $68.2 \text{ m}^2$
- (B)  $93.5 \text{ m}^2$
- (C)  $70.1 \text{ m}^2$
- (D)  $140.3 \text{ m}^2$
- (E)  $187.0 \text{ m}^2$



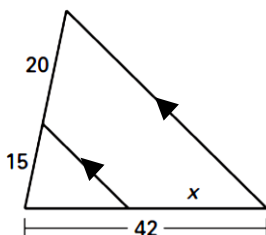
8. **Multiple Choice** Find the area of the triangle. Round to the nearest tenth.

- (A)  $93.5 \text{ cm}^2$
- (B)  $62.4 \text{ cm}^2$
- (C)  $54 \text{ cm}^2$
- (D)  $140.3 \text{ cm}^2$
- (E)  $81 \text{ cm}^2$



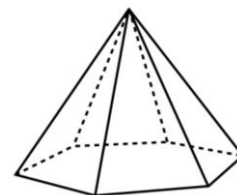
9. **Multiple Choice** Find the value of  $x$ .

- (A) 22
- (B) 24
- (C) 26
- (D) 28
- (E) 30



10. Name the solid below

- a) hexagonal prism
- b) hexagonal pyramid
- c) triangular prism
- d) triangular pyramid

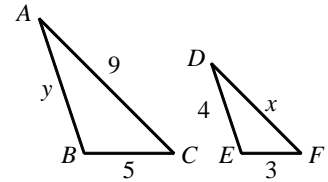


11. If  $\triangle ABC \sim \triangle XYZ$ , which of the following is **not** true? Draw a diagram to help you.

- a)  $\angle A \cong \angle X$                       b)  $\triangle BCA \sim \triangle YZX$   
 c)  $\frac{AB}{XY} = \frac{BC}{YX}$                       d)  $\angle B \cong \angle Y$

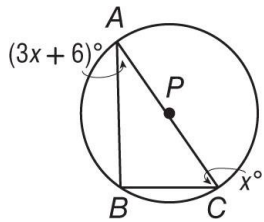
12. Given  $\triangle ABC \sim \triangle DEF$ .

- a. What is the scale factor from  $\triangle ABC$  to  $\triangle DEF$ ? \_\_\_\_\_  
 b. What is the ratio of the areas from  $\triangle ABC$  to  $\triangle DEF$ ? \_\_\_\_\_  
 c. Solve for  $x$  and  $y$ . Round to nearest tenth.

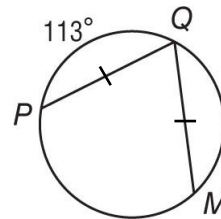


d. If the area of  $\triangle ABC$  is 16 square units, what is the area of  $\triangle DEF$ ?

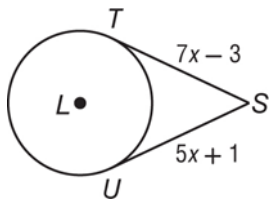
13. Find the  $m\angle A$ .



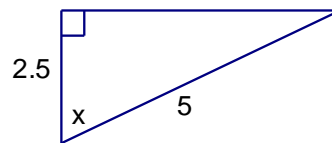
14. Find the  $m\angle Q$ .



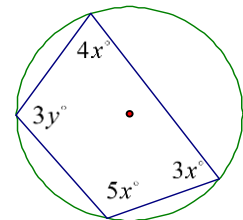
15. Find the value of  $x$ .



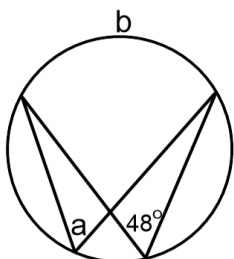
16. Find the value of  $x$ .



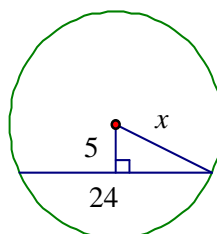
17. Find the value of  $x$  and  $y$ .



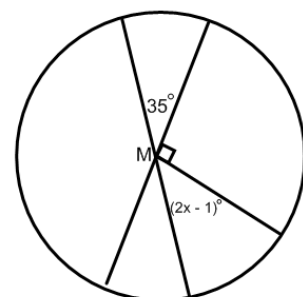
18. Find the value of  $a$  and  $b$ .



19. Find the value of  $x$ .

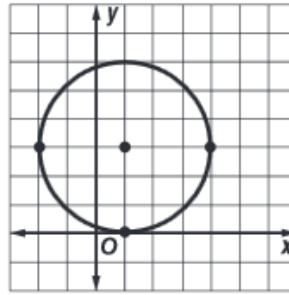


20. Find the value of  $x$ .



21. Write the equation of a circle with a center at (4, -6) that passes through the point (5, 2).

22. Write the equation of the circle graphed below.



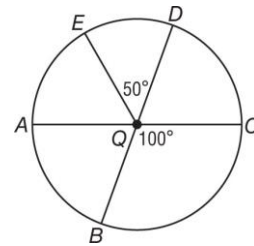
23. The diameters of circle  $Q$  are  $\overline{AC}$  and  $\overline{DB}$ . Identify each arc as a major arc, minor arc, or semicircle of the circle. Then find the arc's measure.

a)  $m\widehat{AE}$

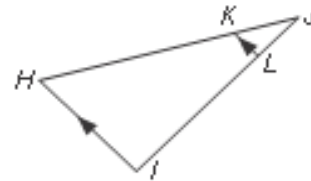
b)  $m\widehat{AB}$

c)  $m\widehat{EDA}$

d)  $m\widehat{ADC}$



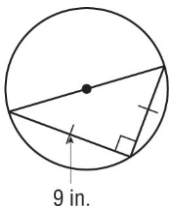
24. If  $JK = 7$  ft.,  $KH = 21$  ft.,  $HI = 10$  ft., and  $JL = 6$  ft. Find  $KL$ .



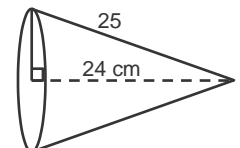
25. Find the **volume** of a hemisphere with a diameter of 12 in. *Leave your answer in terms of  $\pi$ .*

26. Find the exact **circumference** of the circle.

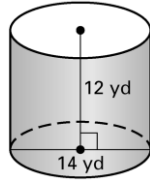
27. Find the diameter and circumference of a circle the area is  $196\pi \text{ cm}^2$ .



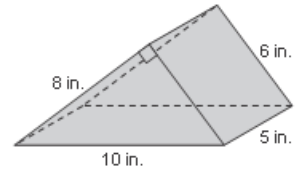
28. Find the **volume** of the right cone. *Leave your answer in terms of  $\pi$ .*



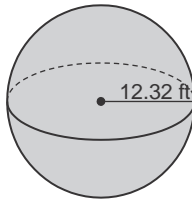
29. Find the **volume** of the right cylinder. *Leave your answer in terms of  $\pi$ .*



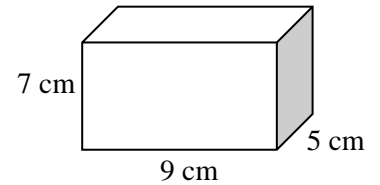
30. What is the **most specific name** of the right prism below. Then, find **volume** of the right prism.



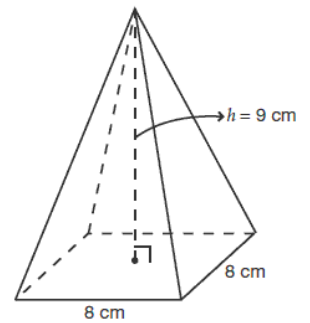
31. Find the **volume** of the sphere. *Round to the nearest tenth.*



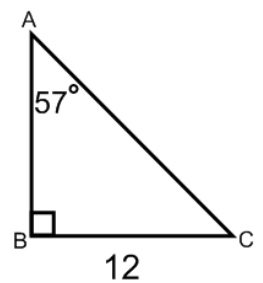
32. Find the **volume** of the rectangular prism.



33. Find the **volume** of the figure to the right. *Round to the nearest tenth if necessary.*



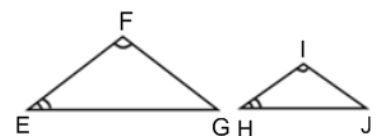
34. Solve the right triangle to the right. *Round to the nearest tenth.*



$m\angle C =$  \_\_\_\_\_       $AB \approx$  \_\_\_\_\_       $AC \approx$  \_\_\_\_\_

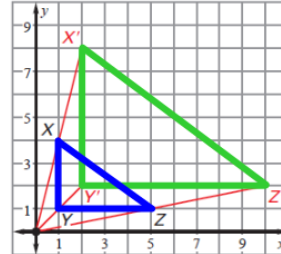
35. Determine if lengths 12, 17, 9 can represent the lengths of the sides of a triangle. If so, classify the triangle as acute, right, or obtuse.

36. Write the similarity statement and postulate/theorem that proves the two triangles are similar.

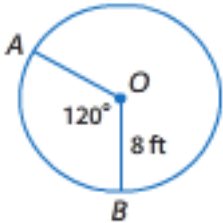


37. The ratio of the angles of  $\triangle ABC$  is 5:6:7. Find the smallest angle measure. *Draw a diagram to help!*

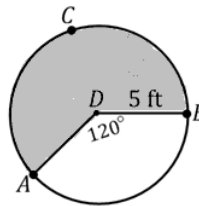
38. Use the diagram to the right to determine whether the dilation centered at the origin is a reduction or enlargement. Then find the scale factor.



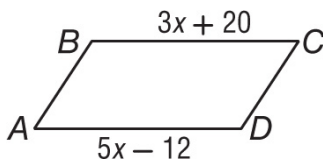
39. Find the length of  $AB$ . *Round to the nearest hundredth.*



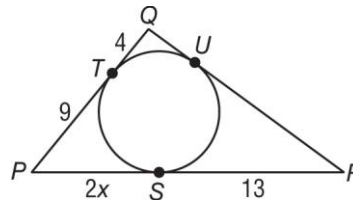
40. Find the area of the shaded region. *Round to the nearest hundredth.*



41. For parallelogram  $ABCD$ , find  $x$ .



42. Find the value of  $x$  and the perimeter of  $\triangle PQR$ .



43. Which of the following is a property of all parallelograms?

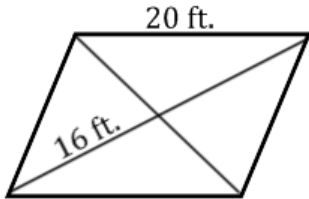
- a. The diagonals are congruent.
- b. The diagonals are perpendicular.
- c. The diagonals bisect opposite angles.
- d. The diagonals bisect each other.

44. What special property does **not** set a square apart from a rectangle?

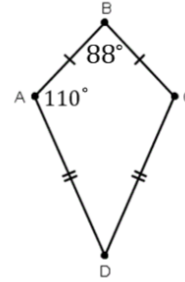
- a. The diagonals are perpendicular.
- b. The diagonals are congruent.
- c. All four sides are congruent.
- d. The diagonals bisect opposite angles.

45.  $ABCD$  is an isosceles trapezoid with diagonals  $\overline{AC}$  and  $\overline{BD}$ . If  $AC = (2x + 10)$  in. and  $BD = 56$  in., find  $x$ . Draw a diagram!

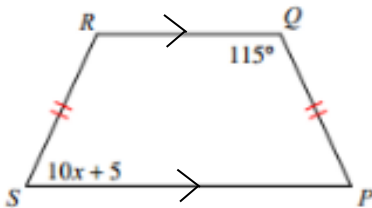
46. Find the area of the rhombus.



47. Find the  $m\angle D$  of kite  $ABCD$ .



48. Using the isosceles trapezoid below, find the value of  $x$  and the  $m\angle P$ .



49. From the top of a 120-foot-high tower, an air traffic controller observes an airplane on the runway at an angle of depression of  $19^\circ$ . How far from the base of the tower is the airplane? Round your answer to the nearest hundredth.

50. Find the exact area of the parallelogram.

