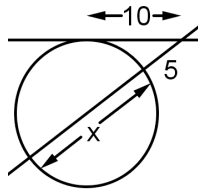


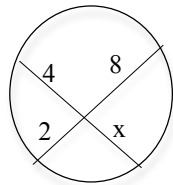
1. Find the value of segment  $x$  if a tangent and a secant intersect the circle as shown.

- a. 2
- b. 15
- c. 20
- d. 12



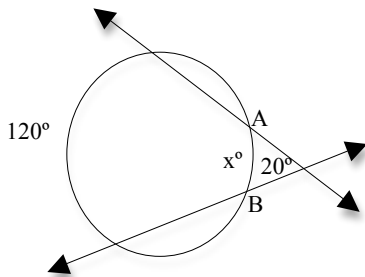
2. Find the value of  $x$ .

- a. 4
- b. 5
- c. 6
- d. 10



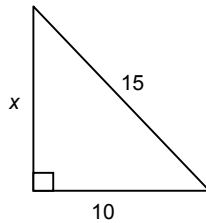
3. Find the measure of arc  $AB$ .

- a.  $20^\circ$
- b.  $40^\circ$
- c.  $80^\circ$
- d.  $160^\circ$



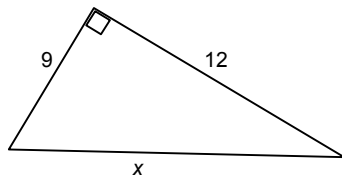
4. Find the value of  $x$ .

- A. 5
- B.  $5\sqrt{5}$
- C. 10
- D.  $10\sqrt{3}$



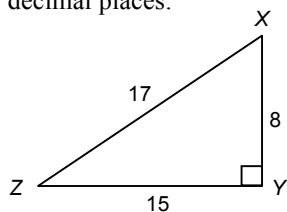
5. Find the value of  $x$ .

- A. 8
- B. 15
- C. 18
- D. 21



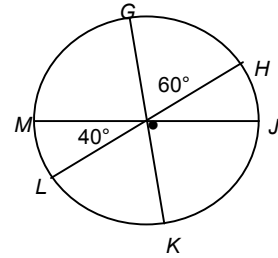
6. Find the tangent of angle  $X$ . Round your answer to four decimal places.

- A. 0.5333
- B. 0.8823
- C. 1.1333
- D. 1.8750



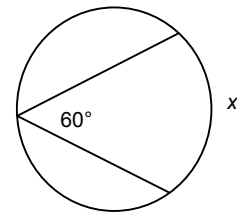
7. Find the measure of arc  $MHK$ .

- A.  $100^\circ$
- B.  $180^\circ$
- C.  $220^\circ$
- D.  $260^\circ$



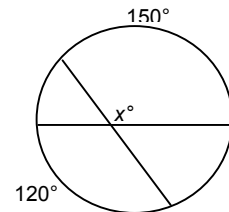
8. Find the value of  $x$ .

- A.  $30^\circ$
- B.  $60^\circ$
- C.  $90^\circ$
- D.  $120^\circ$



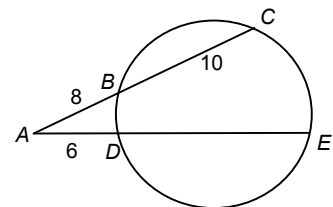
9. Find the value of  $x$ .

- A. 120
- B. 135
- C. 150
- D. 270



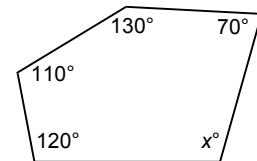
10. Find the value of  $DE$ .

- A. 18
- B. 13.3
- C. 8
- D. 7.5



11. Find the value of  $x$ .

- A. 100
- B. 110
- C. 120
- D. 130



12. Find the sum of the **exterior** angles of a regular octagon.

- A.  $180^\circ$
- B.  $360^\circ$
- C.  $1080^\circ$
- D.  $1440^\circ$

13. If  $m\angle POQ$  is  $45^\circ$  and the diameter is 20 m, find the length of arc PQ.

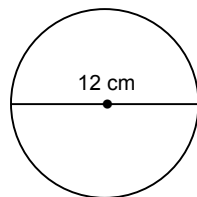
- A.  $2.5\pi$  m
- B.  $5.0\pi$  m
- C.  $15\pi$  m
- D.  $17.5\pi$  m

14. The radius of a circle is 23 mm. Find the circumference of the circle.

- A. 46.0 mm
- B. 72.2 mm
- C. 144.4 mm
- D. 1661.1 mm

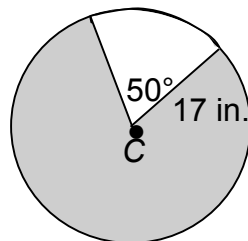
15. Find the area of the circle.

- A.  $6\pi$  cm<sup>2</sup>
- B.  $12\pi$  cm<sup>2</sup>
- C.  $36\pi$  cm<sup>2</sup>
- D.  $144\pi$  cm<sup>2</sup>



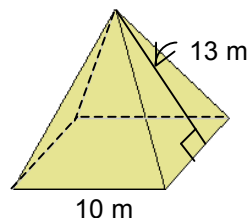
16. Find the area of the shaded region.

- A.  $92$  in.<sup>2</sup>
- B.  $126$  in.<sup>2</sup>
- C.  $782$  in.<sup>2</sup>
- D.  $908$  in.<sup>2</sup>



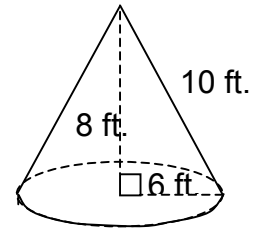
17. Find the volume of the square pyramid.

- A.  $280$  m<sup>3</sup>
- B.  $340$  m<sup>3</sup>
- C.  $400$  m<sup>3</sup>
- D.  $580$  m<sup>3</sup>



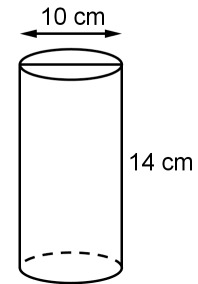
18. Find the volume of the right cone.

- A.  $226$  ft.<sup>3</sup>
- B.  $264$  ft.<sup>3</sup>
- C.  $302$  ft.<sup>3</sup>
- D.  $452$  ft.<sup>3</sup>



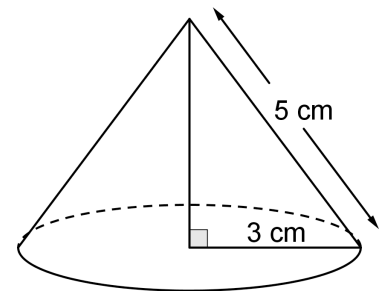
19. Find the volume of the right cylinder. Round your answer to the nearest whole number.

- A.  $70$  cm<sup>3</sup>
- B.  $440$  cm<sup>3</sup>
- C.  $550$  cm<sup>3</sup>
- D.  $1099$  cm<sup>3</sup>



20. Find the volume of the cone.

- A.  $5\pi$  cm<sup>3</sup>
- B.  $12\pi$  cm<sup>3</sup>
- C.  $15\pi$  cm<sup>3</sup>
- D.  $36\pi$  cm<sup>3</sup>

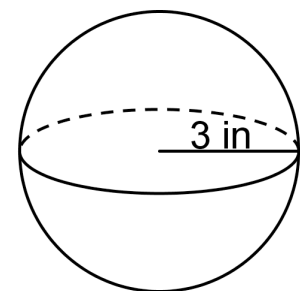


21. Find the volume of a square pyramid with a base area of 40 square inches and a height of 9 inches.

- A. 120 cubic inches
- B. 180 cubic inches
- C. 360 cubic inches
- D. 4800 cubic inches

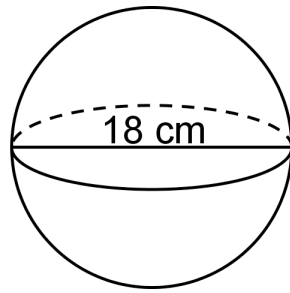
22. Find the volume of the sphere.

- A.  $28$  in.<sup>3</sup>
- B.  $113$  in.<sup>3</sup>
- C.  $175$  in.<sup>3</sup>
- D.  $452$  in.<sup>3</sup>



23. Find the volume of the sphere.

- A.  $324\pi \text{ cm}^3$   
 B.  $972\pi \text{ cm}^3$   
 C.  $1296\pi \text{ cm}^3$   
 D.  $7776\pi \text{ cm}^3$



24. The perimeter of a square is 64 cm. Find the length of a diagonal.

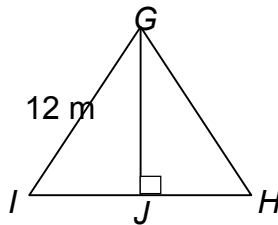
- A. 8 cm  
 B.  $8\sqrt{2}$  cm  
 C. 16 cm  
 D.  $16\sqrt{2}$  cm

25. A rectangular yard is 50 feet wide by 120 feet long. How far is it diagonally from one corner to the opposite corner?

- A. 65 ft.  
 B. 85 ft.  
 C. 130 ft.  
 D. 170 ft.

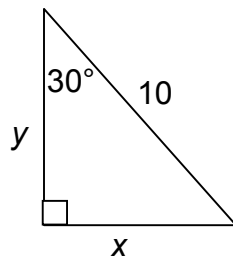
26.  $\triangle GHI$  is equilateral with sides measuring 12 m. Find  $GJ$ .

- A. 6 m  
 B.  $6\sqrt{3}$  m  
 C. 12 m  
 D.  $12\sqrt{3}$  m



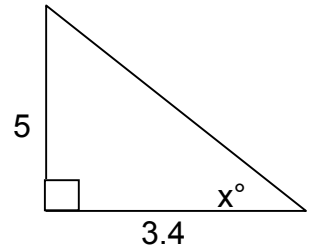
27. Find the value of  $x$  and  $y$ .

- A.  $x = 5, y = 5\sqrt{3}$   
 B.  $x = 5\sqrt{3}, y = 5$   
 C.  $x = 5, y = 5\sqrt{2}$   
 D.  $x = 5\sqrt{2}, y = 5$



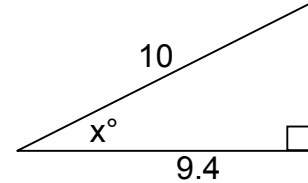
28. Find the value of  $x$ .

- A.  $34^\circ$   
 B.  $48^\circ$   
 C.  $56^\circ$   
 D.  $90^\circ$



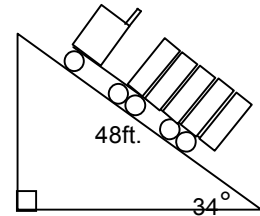
29. Find the value of  $x$ .

- A.  $20^\circ$   
 B.  $60^\circ$   
 C.  $70^\circ$   
 D.  $80^\circ$



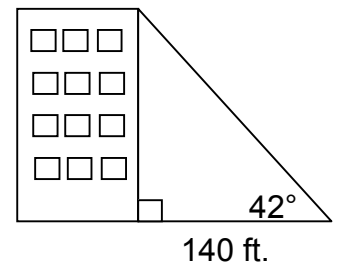
30. A ramp is used to unload trucks. How high is the end of a 48 foot ramp when it is tipped by a  $34^\circ$  angle?

- A. 24.0 ft.  
 B. 26.8 ft.  
 C. 32.0 ft.  
 D. 39.8 ft.



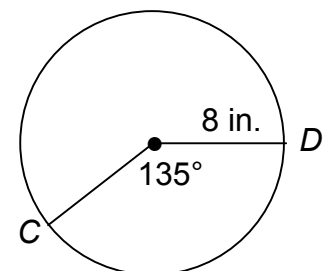
31. You are measuring the height of a building. You stand 140 feet from the base of the building. You measure the angle of elevation from a point on the ground to the top of the building to be  $42^\circ$ . Estimate the height of the building.

- A. 93 ft.  
 B. 104 ft.  
 C. 126 ft.  
 D. 155 ft.



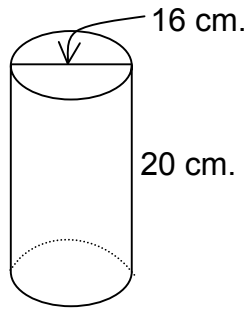
32. Find the length of arc CD.

- A.  $3\pi$  in.  
 B.  $6\pi$  in.  
 C.  $12\pi$  in.  
 D.  $16\pi$  in.



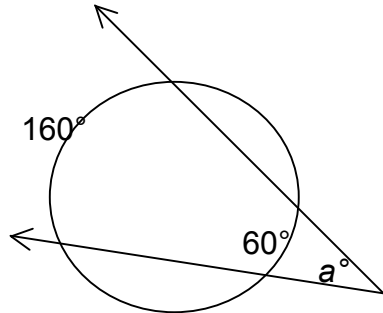
33. Find the volume of the cylinder.

- A.  $4021.2 \text{ cm}^2$
- B.  $3619.1 \text{ cm}^2$
- C.  $1206.4 \text{ cm}^2$
- D.  $1105.8 \text{ cm}^2$



34. Find the value of  $a$ .

- A. 30
- B. 50
- C. 80
- D. 100

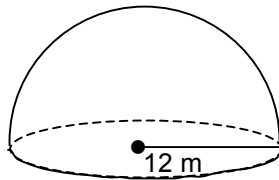


35. Find the volume of a pyramid that has a square base with 5 cm sides and a height of 9 cm.

- A.  $15 \text{ cm}^3$
- B.  $30 \text{ cm}^3$
- C.  $50 \text{ cm}^3$
- D.  $75 \text{ cm}^3$

36. Find the volume of the hemisphere. Round your answer to the nearest whole number.

- A.  $2304 \text{ m}^3$
- B.  $3618 \text{ m}^3$
- C.  $5426 \text{ m}^3$
- D.  $7235 \text{ m}^3$



37. Find the radius of a circle with circumference  $20\pi \text{ cm}$ .

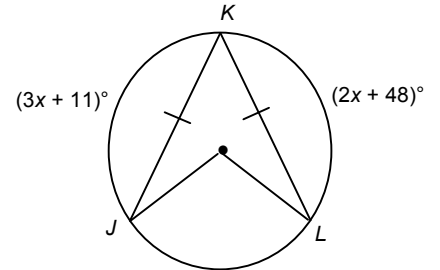
- A. 10 cm
- B.  $5\pi \text{ cm}$
- C. 20 cm
- D.  $10\pi \text{ cm}$

38. Find the radius of a circle with area  $81\pi \text{ ft}^2$ .

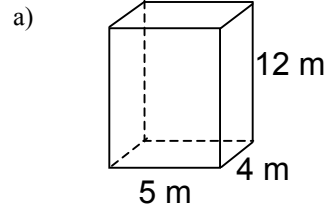
- A.  $9\pi \text{ ft.}$
- B. 18 ft.
- C.  $3\pi \text{ ft.}$
- D. 9 ft.

39. Find the measure of arc JL.

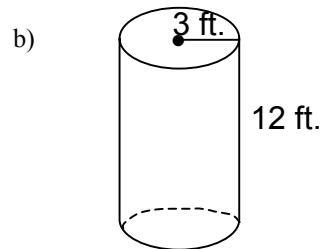
- A.  $37^\circ$
- B.  $116^\circ$
- C.  $122^\circ$
- D.  $244^\circ$



40. Find the volume.

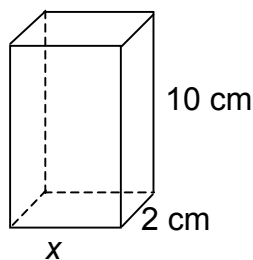


a) \_\_\_\_\_

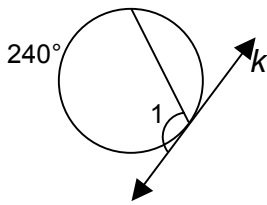


b) \_\_\_\_\_

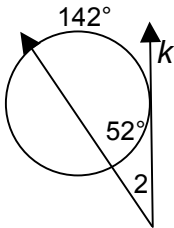
41. The volume of the right prism is  $160 \text{ cm}^3$ . Find the value of  $x$ .



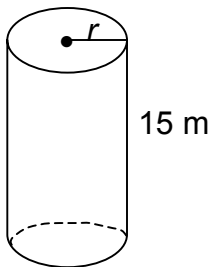
42. Line  $k$  is tangent to the circle. Find  $m \angle 1$ .



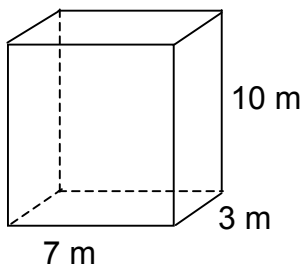
43. Line  $k$  is tangent to the circle. Find  $m \angle 2$ .



44. The volume of the cylinder is  $3817 \text{ m}^3$ . Find the radius  $r$ . Round to the nearest whole number.

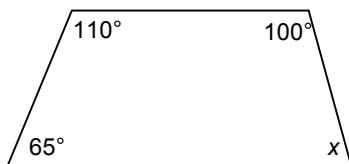


45. Find the volume of the right prism.



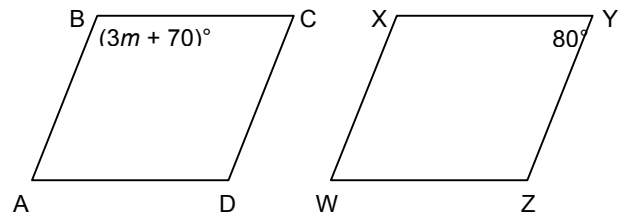
46. Solve for  $x$ .

- A.  $65^\circ$   
 B.  $85^\circ$   
 C.  $110^\circ$   
 D.  $115^\circ$



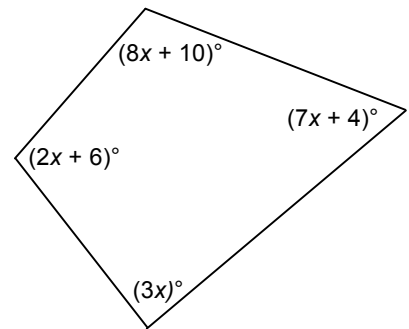
47. Parallelogram ABCD and parallelogram WXYZ are congruent. Find the value of  $m$ .

- A. 3.3  
 B. 8  
 C. 8.5  
 D. 10



48. Find the value of  $x$ .

- A. 8  
 B. 9  
 C. 17  
 D. 19



49. A square with a side length of 5 has one vertex at  $(2, 0)$ . Which of the following points **cannot** be a vertex of the square?

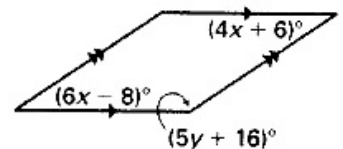
- (A)  $(7, 0)$   
 (B)  $(0, 7)$   
 (C)  $(-3, 0)$   
 (D)  $(-3, -5)$   
 (E)  $(7, -5)$

50. What special type of quadrilateral has the vertices  $F(-6, -2)$ ,  $G(1, -2)$ ,  $H(-6, -5)$ , and  $I(1, -5)$ ?

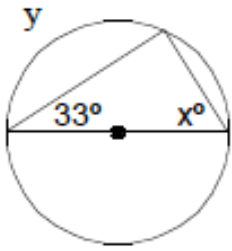
- (A) rectangle  
 (B) square  
 (C) parallelogram  
 (D) rhombus  
 (E) kite

51. What are the values of the variables in quadrilateral  $MNOP$ ?

- (A)  $x = 4, y = 19$   
 (B)  $x = 3, y = 32$   
 (C)  $x = 5, y = 27$   
 (D)  $x = 7, y = 26$



52. Find  $x$  and  $y$ .

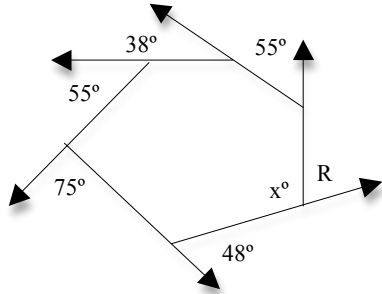


53. Which statement is true when using segments of length 5, 8, and 10 to form a triangle?

- a. The segments form an acute triangle.
- b. The segments form an obtuse triangle.
- c. The segments form a right triangle.
- d. The segments do not form a triangle.

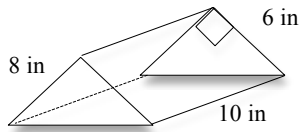
54. Determine the measure of the interior angle at vertex R.

- a.  $89^\circ$
- b.  $91^\circ$
- c.  $109^\circ$
- d.  $111^\circ$



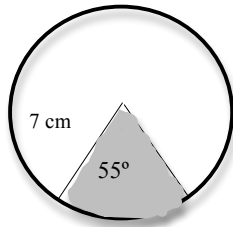
55. Find the volume of the solid.

- a.  $240 \text{ in}^2$
- b.  $280 \text{ in}^2$
- c.  $340 \text{ in}^2$
- d.  $480 \text{ in}^2$



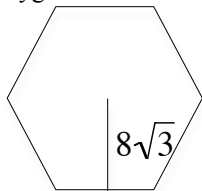
56. Find the area of the shaded region.

- a.  $7 \text{ cm}^2$
- b.  $24 \text{ cm}^2$
- c.  $288 \text{ cm}^2$
- d.  $1008 \text{ cm}^2$



57. Find the area of the polygon.

- a.  $83 \text{ u}^2$
- b.  $333 \text{ u}^2$
- c.  $665 \text{ u}^2$
- d.  $1330 \text{ u}^2$



58. Using the image at the right, determine which of the following are **true** statements.

- a)  $\angle BCA$  is an inscribed angle.
- b)  $\overline{AB}$  is an arc.
- c)  $\overleftrightarrow{DE}$  is a chord.
- d)  $\overleftrightarrow{AH}$  is a tangent.

