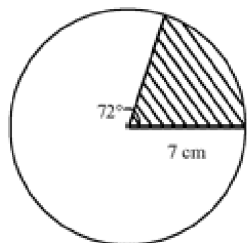


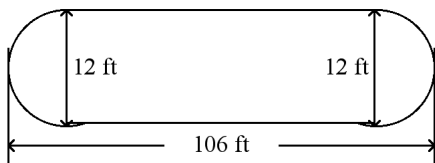
Geometry Mastery Test #9 End of Chapter Review

1. A circle has a circumference of 50 meters. Find its diameter.
2. For a circle of radius 5 feet, find the length of an arc s with a measure of 28° .
3. Find the area of the shaded region.

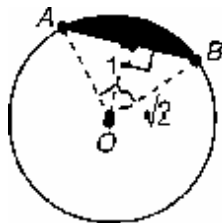


College Entrance Exam:

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



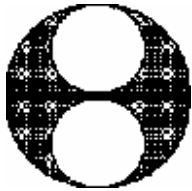
5. The radius of the circle is $\sqrt{2}$. The distance from the center to the chord is 1. If the measure of \widehat{AB} is 90° , the area of the shaded region is _____.



Name: _____

ID: A

6. Each circle is tangent to the other two. If the diameter of the large circle is 12, the area of the shaded region is _____.

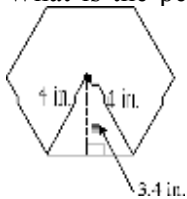


7. Find the area of a regular octagon with side length 9 cm.
8. Find the area of a regular decagon with radius 7 cm. Round to the nearest tenth.

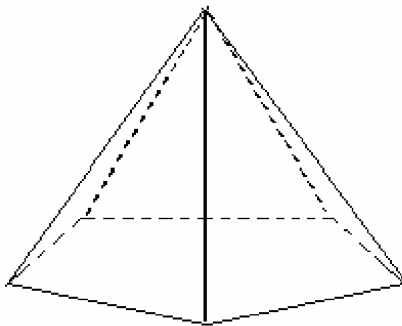
9. A regular hexagon has an apothem of 2 and a side length of $\frac{4\sqrt{3}}{3}$. Its area is _____.



10. What is the perimeter of the regular hexagon to the nearest inch?



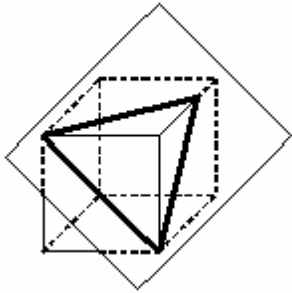
11. Find the number of vertices, faces, and edges for the figure below.



Name: _____

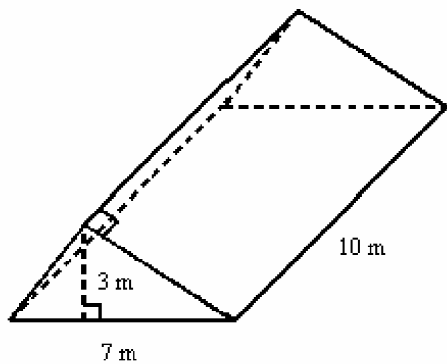
ID: A

12. Describe the cross section.

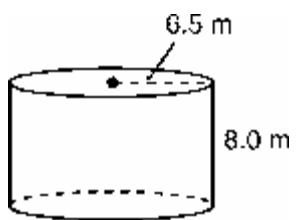


13. Find the exact volume of a cylinder that has a height of 18 inches and a radius of 8 inches.

14. Find the volume of the right triangular prism.



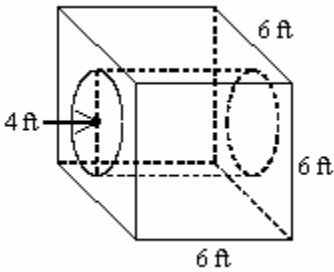
15. The volume of the right circular cylinder is about _____.



Name: _____

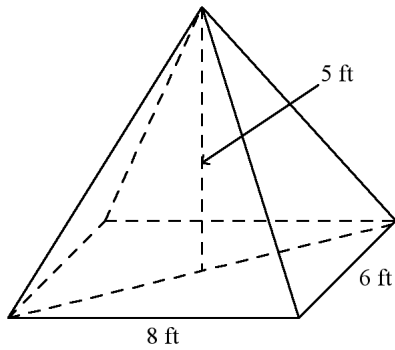
ID: A

16. A concrete block has a cylindrical hole 4 feet in diameter drilled through it to allow a pipe to pass through. Use 3.14 as an approximation for π and round your answer to the nearest tenth.

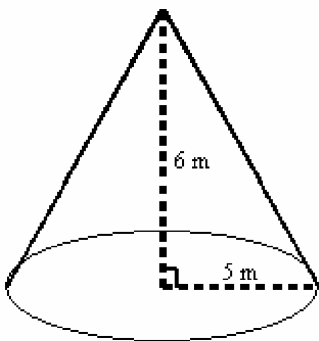


How many cubic feet of concrete are left in the block?

17. The pyramid shown has a rectangular base and faces that are isosceles triangles. Find its volume.



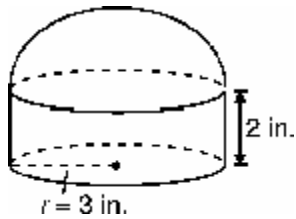
18. Calculate the volume of the cone. Use $\pi \approx 3.14$.



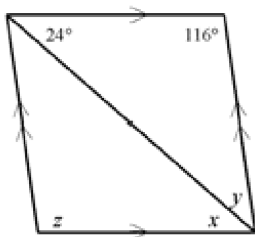
19. Find the surface area of a sphere that has a diameter of 16 cm. Express your answer in terms of π .

20. Find the volume of a sphere 4 ft in diameter. Use $\pi \approx 3.14$ and round your answer to the nearest tenth.

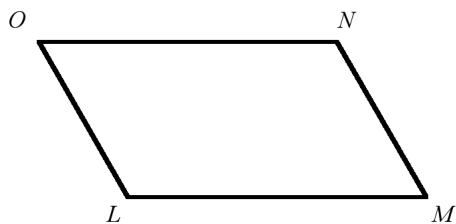
21. The top of the cylindrical container shown has the shape of a hemisphere. The total volume of the container is _____.



22. Find the measure of each exterior angle of a regular polygon with 36 sides.
23. Find the value of the variables in the parallelogram.



24. If $ON = 9x - 2$, $LM = 8x + 5$, $NM = x - 5$, and $OL = 2y + 7$, find the values of x and y given that $LMNO$ is a parallelogram.

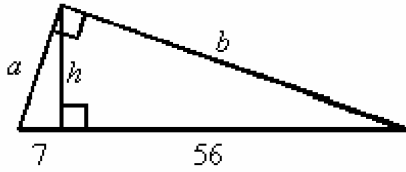


25. A ship in calm seas steamed 12 km in one direction, turned and steamed 16 km in another direction, and then returned 20 km back to its original position. The captain then plotted the ship's course on a nautical chart. She asked her first officer to look at the chart and describe the ship's path. Did the first officer describe it as an acute, obtuse, or right triangle? Then the second officer said she could further identify whether the path was scalene, isosceles, or equilateral. What did she determine?
26. A slide 3.8 m long makes an angle of 25° with the ground. How high is the top of the slide above the ground?
27. Liola drives 13 km up a hill that is at a grade of 10° . What horizontal distance, to the nearest tenth of kilometer, has she covered?

Name: _____

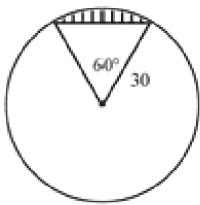
ID: A

28. Find a , b , and h .

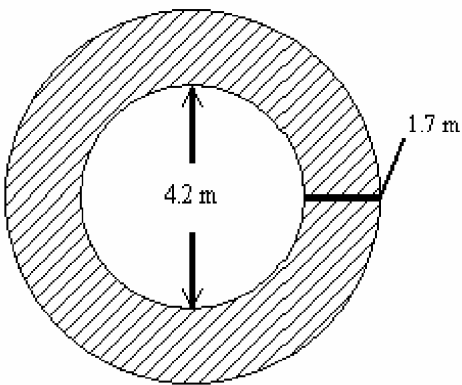


29. Find the number of sides of a convex polygon if the measures of its interior angles have a sum of $21,240^\circ$.

30. Find the area of the shaded region. Express your answer in terms of π .



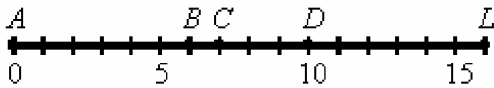
31. The figure below represents the overhead view of a deck surrounding a hot tub. What is the area of the deck?
Use $\pi \approx 3.14$.



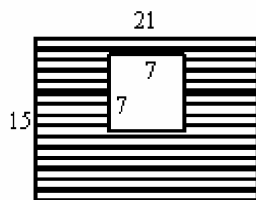
32. Find the area of the shaded region. (Assume that the ends of the figure are semicircles.)



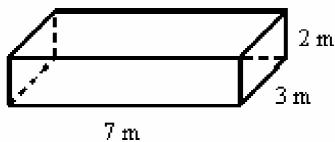
33. Find the probability that a point chosen at random on \overline{AL} is on \overline{AB} .



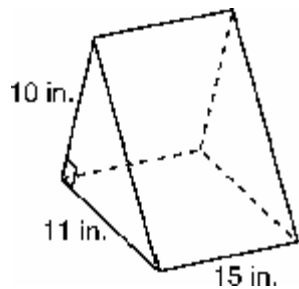
34. If a point is selected at random, what is the probability that it will lie within the shaded rectangular region rather than the unshaded rectangular region?



35. Find the volume of the rectangular prism.



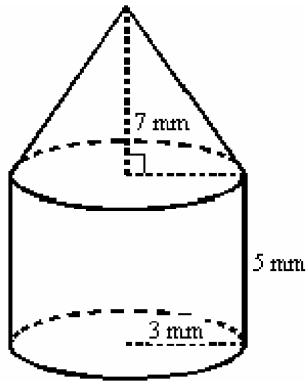
36. Johannes is building a square sandbox with sides 3 feet long. He wants to put sand 1.05 feet deep in the box. How many cubic feet of sand should Johannes order?
37. Find the volume of the right prism.



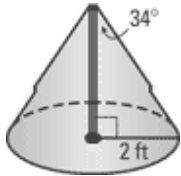
38. The volume of a right cylinder is $160\pi\text{cm}^3$ and the height is 10 cm. Find the diameter.

Find the volume of the figure to the nearest tenth.

39.



40. Find the volume of the right cone. Round your answer to two decimal places.



41. Find the diameter of a sphere that has a surface area of $169\pi \text{ in}^2$.
42. 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.)
43. The surface areas of two similar solids are 200 m^2 and 1152 m^2 . The volume of the larger one is 1728 m^3 . What is the volume of the smaller one?
44. The ratio of the diameters of two similar cylinders is 4:5. What is the ratio of their surface areas? of their volumes?

**Geometry Mastery Test #9 End of Chapter Review
Answer Section****SHORT ANSWER**

1. ANS:
15.92 m

TOP: Lesson 11.1 Circumference and Arc Length

2. ANS:
 $s = \frac{7}{9}\pi$ feet

TOP: Lesson 11.1 Circumference and Arc Length

3. ANS:
30.79 cm²

TOP: Lesson 11.1 Circumference and Arc Length

4. ANS:
(188 + 12 π) ft

TOP: Lesson 11.1 Circumference and Arc Length

5. ANS:
 $\left(\frac{\pi}{2} - 1\right)$ sq. units

TOP: Lesson 11.2 Areas of Circles and Sectors

6. ANS:
18 π sq. units

TOP: Lesson 11.2 Areas of Circles and Sectors

7. ANS:
391.1 cm²

TOP: Lesson 11.3 Areas of Regular Polygons

8. ANS:
144.0 cm²

TOP: Lesson 11.3 Areas of Regular Polygons

9. ANS:
8 $\sqrt{3}$ sq. units

TOP: Lesson 11.3 Areas of Regular Polygons

10. ANS:
24 inches

TOP: Lesson 11.3 Areas of Regular Polygons

11. ANS:
6 vertices, 6 faces, 10 edges

TOP: Lesson 11.5 Explore Solids

12. ANS:
triangle

TOP: Lesson 11.5 Explore Solids

13. ANS:
 $1152\pi \text{ in}^3$

TOP: Lesson 11.6 Volume of Prisms and Cylinders

14. ANS:
 105 m^3

TOP: Lesson 11.6 Volume of Prisms and Cylinders

15. ANS:
 1061.9 m^3

TOP: Lesson 11.6 Volume of Prisms and Cylinders

16. ANS:
140.6 cubic feet

TOP: Lesson 11.6 Volume of Prisms and Cylinders

17. ANS:
 80 ft^3

TOP: Lesson 11.7 Volumes of Pyramids and Cones

18. ANS:
 157 m^3

TOP: Lesson 11.7 Volumes of Pyramids and Cones

19. ANS:
 $256\pi \text{ cm}^2$

TOP: Lesson 11.8 Surface Area and Volume of Spheres

20. ANS:
 33.5 ft^3

TOP: Lesson 11.8 Surface Area and Volume of Spheres

21. ANS:

$$36\pi \text{ in.}^3$$

TOP: Lesson 11.8 Surface Area and Volume of Spheres

22. ANS:

$$10^\circ$$

TOP: Lesson 8.1 Find Angle Measures in Polygons

23. ANS:

$$x = 24^\circ, y = 40^\circ, z = 116^\circ$$

TOP: Lesson 8.2 Use Properties of Parallelograms

24. ANS:

$$x = 7; y = -\frac{5}{2}$$

TOP: Lesson 8.2 Use Properties of Parallelograms

25. ANS:

right; scalene

TOP: Lesson 7.2 Use the Converse of the Pythagorean Theorem

26. ANS:

$$1.61 \text{ m}$$

TOP: Lesson 7.6 Apply the Sine and Cosine Ratios

27. ANS:

$$12.8 \text{ km}$$

TOP: Lesson 7.6 Apply the Sine and Cosine Ratios

28. ANS:

$$a = 21, b = 42\sqrt{2}, h = 14\sqrt{2}$$

TOP: Lesson 7.3 Use Similar Right Triangles

29. ANS:

$$120$$

TOP: Lesson 8.1 Find Angle Measures in Polygons

30. ANS:

$$150\pi - 225\sqrt{3}$$

TOP: Lesson 11.2 Areas of Circles and Sectors

31. ANS:

$$31.4942 \text{ m}^2$$

TOP: Lesson 11.2 Areas of Circles and Sectors

32. ANS:
 ≈ 322 sq. units

TOP: Lesson 11.2 Areas of Circles and Sectors

33. ANS:
 $\frac{3}{8}$

TOP: Lesson 11.4 Use Geometric Probability

34. ANS:
 $\frac{38}{45}$

TOP: Lesson 11.4 Use Geometric Probability

35. ANS:
 42 m^3

TOP: Lesson 11.6 Volume of Prisms and Cylinders

36. ANS:
 9.45 ft^3

TOP: Lesson 11.6 Volume of Prisms and Cylinders

37. ANS:
 825 in.^3

TOP: Lesson 11.6 Volume of Prisms and Cylinders

38. ANS:
 8 cm

TOP: Lesson 11.6 Volume of Prisms and Cylinders

39. ANS:
 207.3 mm^3

TOP: Lesson 11.7 Volumes of Pyramids and Cones

40. ANS:
 $V \approx 12.42 \text{ ft}^3$

TOP: Lesson 11.7 Volumes of Pyramids and Cones

41. ANS:
 13 in.

TOP: Lesson 11.8 Surface Area and Volume of Spheres

42. ANS:
 99 gallons

TOP: Lesson 11.8 Surface Area and Volume of Spheres

43. ANS:
 125 m^3

TOP: Lesson 11.9 Explore Similar Solids

44. ANS:
 $\frac{16}{25}, \frac{64}{125}$

TOP: Lesson 11.9 Explore Similar Solids