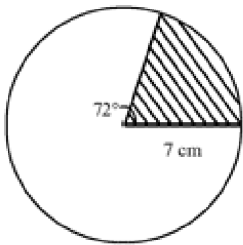
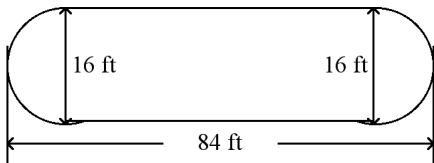


**Geometry Mastery Test #9 MID Chapter Review**

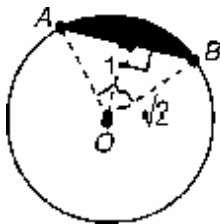
1. The diameter of a bicycle wheel is 75 centimeters. How far does the bicycle travel when the wheel makes 29 revolutions? Use 3.14 as an approximation for  $\pi$ .
2. A circle has a circumference of 34 meters. Find its diameter.
3. For a circle of radius 5 feet, find the length of an arc  $s$  with a measure of  $42^\circ$ .
4. Find the area of the shaded region.



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

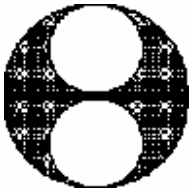


6. The radius of the circle is  $\sqrt{2}$ . The distance from the center to the chord is 1. If the measure of  $\widehat{AB}$  is  $90^\circ$ , the area of the shaded region is \_\_\_\_\_.

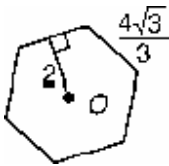


7. Find the area of a regular dodecagon with side length 8 cm.
8. Find the area of a regular octagon with radius 7 cm. Round to the nearest tenth.

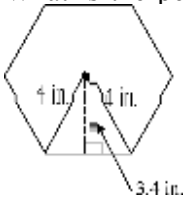
9. Each circle is tangent to the other two. If the diameter of the large circle is 12, the area of the shaded region is \_\_\_\_\_.



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

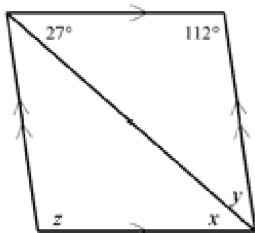


11. What is the perimeter of the regular hexagon to the nearest inch?



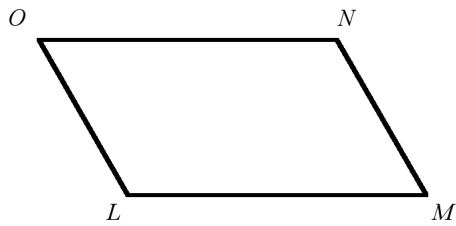
12. Find the measure of each exterior angle of a regular polygon with 36 sides.

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

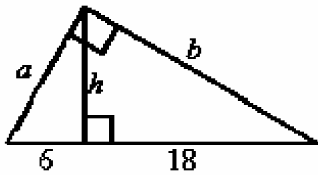


14. A ship in calm seas steamed 24 km in one direction, turned and steamed 24 km in another direction, and then returned 16 km back to its original position. The captain then plotted the ship's course on a nautical chart. She asked her first officer to look at the chart and describe the ship's path. 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?

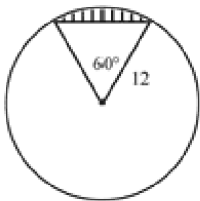
15. If  $ON = 8x - 4$ ,  $LM = 7x + 6$ ,  $NM = x - 4$ , and  $OL = 2y + 7$ , find the values of  $x$  and  $y$  given that  $LMNO$  is a parallelogram.



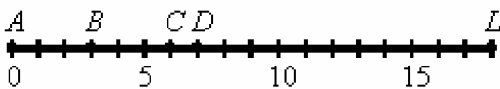
16. A slide 3.5 m long makes an angle of  $28^\circ$  with the ground. How high is the top of the slide above the ground?
17. Liola drives 12 km up a hill that is at a grade of  $13^\circ$ . What horizontal distance, to the nearest tenth of kilometer, has she covered?
18. Find  $a$ ,  $b$ , and  $h$ .



19. Find the number of sides of a convex polygon if the measures of its interior angles have a sum of  $2340^\circ$ .
20. Find the area of the shaded region. Express your answer in terms of  $\pi$ .



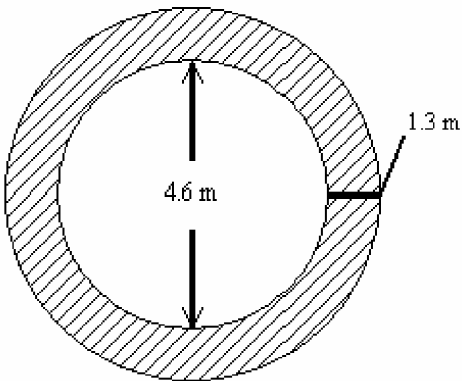
21. Find the probability that a point chosen at random on  $\overline{AL}$  is on  $\overline{AC}$ .



Name: \_\_\_\_\_

ID: A

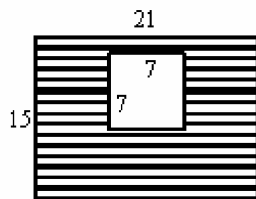
22. The figure below represents the overhead view of a deck surrounding a hot tub. What is the area of the deck?  
Use  $\pi \approx 3.14$ .



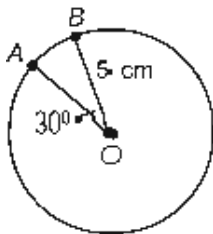
23. Find the area of the shaded region. (Assume that the ends of the figure are semicircles.)



24. 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?



25. Find the arc length of  $\widehat{AB}$  to two decimal places.



## Geometry Mastery Test #9 MID Chapter Review Answer Section

### SHORT ANSWER

1. ANS:  
6,829.5 centimeters

TOP: Lesson 11.1 Circumference and Arc Length

2. ANS:  
10.82 m

TOP: Lesson 11.1 Circumference and Arc Length

3. ANS:  
 $s = \frac{7}{6}\pi$  feet

TOP: Lesson 11.1 Circumference and Arc Length

4. ANS:  
 $30.79 \text{ cm}^2$

TOP: Lesson 11.1 Circumference and Arc Length

5. ANS:  
 $(136 + 16\pi)$  ft

TOP: Lesson 11.1 Circumference and Arc Length

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

TOP: Lesson 11.2 Areas of Circles and Sectors

7. ANS:  
 $716.6 \text{ cm}^2$

TOP: Lesson 11.3 Areas of Regular Polygons

8. ANS:  
 $138.6 \text{ cm}^2$

TOP: Lesson 11.3 Areas of Regular Polygons

9. ANS:  
 $18\pi$  sq. units

TOP: Lesson 11.2 Areas of Circles and Sectors

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

TOP: Lesson 11.3 Areas of Regular Polygons

11. ANS:  
 24 inches

TOP: Lesson 11.3 Areas of Regular Polygons

12. ANS:  
 $10^\circ$

TOP: Lesson 8.1 Find Angle Measures in Polygons

13. ANS:  
 $x = 27^\circ$ ,  $y = 41^\circ$ ,  $z = 112^\circ$

TOP: Lesson 8.2 Use Properties of Parallelograms

14. ANS:  
 acute; isosceles

TOP: Lesson 7.2 Use the Converse of the Pythagorean Theorem

15. ANS:  
 $x = 10$ ;  $y = -\frac{1}{2}$

TOP: Lesson 8.2 Use Properties of Parallelograms

16. ANS:  
 1.64 m

TOP: Lesson 7.6 Apply the Sine and Cosine Ratios

17. ANS:  
 11.7 km

TOP: Lesson 7.6 Apply the Sine and Cosine Ratios

18. ANS:  
 $a = 12$ ,  $b = 12\sqrt{3}$ ,  $h = 6\sqrt{3}$

TOP: Lesson 7.3 Use Similar Right Triangles

19. ANS:  
 15

TOP: Lesson 8.1 Find Angle Measures in Polygons

20. ANS:  
 $24\pi - 36\sqrt{3}$

TOP: Lesson 11.2 Areas of Circles and Sectors

21. ANS:

$$\frac{1}{3}$$

TOP: Lesson 11.4 Use Geometric Probability

22. ANS:

$$24.0838 \text{ m}^2$$

TOP: Lesson 11.2 Areas of Circles and Sectors

23. ANS:

$$\approx 322 \text{ sq. units}$$

TOP: Lesson 11.2 Areas of Circles and Sectors

24. ANS:

$$\frac{38}{45}$$

TOP: Lesson 11.4 Use Geometric Probability

25. ANS:

$$2.62 \text{ cm}$$

TOP: Lesson 11.1 Circumference and Arc Length