

Geometry – Perimeter, Area, Surface Area & Volume

Name _____

TEST REVIEW Part 2

Period _____ Date _____

1) Hakeem is making a sign to hang outside his store. He made plans for a rectangular sign of certain dimensions but then decided he wanted to double both the length and the width. How will the area of the sign be affected with this change in the length and width?

2) The heights of two similar triangles are in the ratio 2:5. If the area of the larger triangle is 400 square units, what is the area of the smaller triangle?

3) An equilateral triangle has a height of $2\sqrt{3}$.

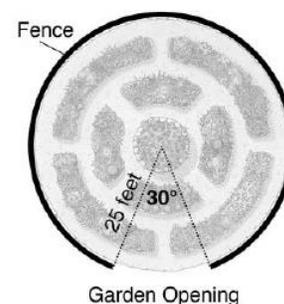
Choose all the statements below that describe the triangle.

Each side of the triangle measures 2	<input type="checkbox"/>
Each side of the triangle measures 4.	<input type="checkbox"/>
The perimeter of the triangle is 6.	<input type="checkbox"/>
The perimeter of the triangle is 12	<input type="checkbox"/>
The area of the triangle is $2\sqrt{3}$	<input type="checkbox"/>
The area of the triangle is $4\sqrt{3}$	<input type="checkbox"/>

4) Jose' has a circular rug on the floor of his bedroom. If the area of the rug is 16π square feet, what is the diameter of the rug?

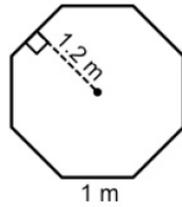
5) Ms. Walton has a square garden that is completely surrounded by an old fence. She plans to tear down the old fence and make her new square garden 4 times the area of her old garden. If the old fence has a total length of 80 feet, how long will the new fence be?

6) Ashley maintains a circular flower garden that has a radius of 25 feet. She would like to construct a fence around most of the garden, as indicated by the solid black line in the diagram below. She wants to keep an opening to the garden that makes a central angle of 30° .



- 7) Shaina is creating a custom glass table that has a top in the shape of a regular octagon. She wants to find the area of the octagon to determine the amount of glass needed. The top of the table has an apothem that measures 1.2 meters and each side of the octagon measures 1 meter. A diagram of the tabletop is shown below.

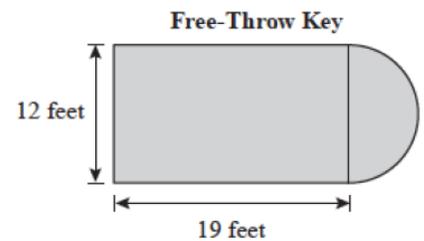
Custom Glass Tabletop



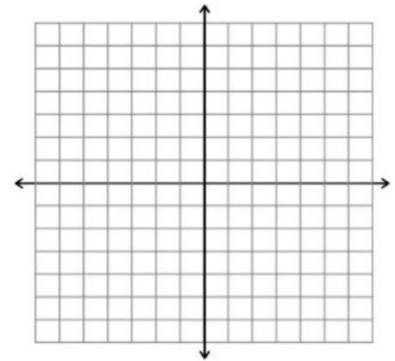
Which of the following is closest to the area, in square meters, of the octagon?

- A. 0.6 m^2 B. 4.8 m^2 C. 8.0 m^2 D. 9.6 m^2

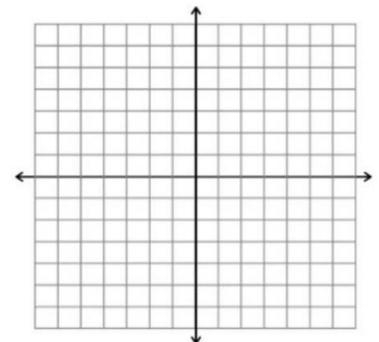
- 8) Jim is repainting a *free-throw key* of a basketball court. The free-throw key is made by combining a rectangle and a semicircle, as shown. In order to know how much paint to purchase, Jim will determine the area of the free-throw key. What is the total area, **to the nearest whole square foot**, of the free-throw key shown in the diagram?



- 9) What is the perimeter of a rectangle with vertices at $C(-1, 1)$, $D(3, 4)$, $E(6, 0)$, $F(2, -3)$?



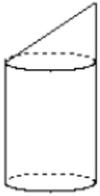
- 10) Calculate the area of triangle ABC with altitude CD , given: $A(-6, -4)$, $B(6, 5)$, $C(-1, 6)$, and $D(2, 2)$.



- 11) Which solid of revolution is produced by rotating the shape to the right 360° about the given axis?



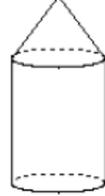
a.



b.



c.



d.



- 12) Which of the following describes what will occur to the volume of a sphere if the radius were tripled in length?

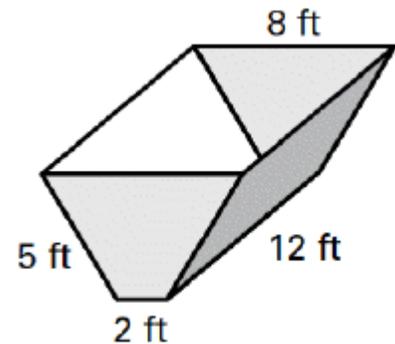
- The new volume will be 3 times as large as the original volume.
- The new volume will be 6 times as large as the original volume.
- The new volume will be 9 times as large as the original volume.
- The new volume will be 27 times as large as the original volume.

- 13) A water trough has two congruent isosceles trapezoids as ends and two congruent rectangles as sides.

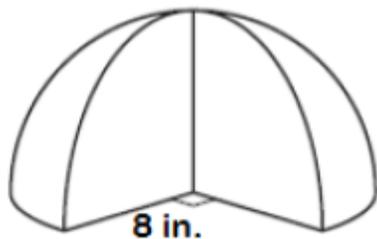
Find the exterior surface area of the trough.

Find the volume of the trough in cubic feet.

If the trough is emptied until the water level is even with the midsegment of the trapezoidal ends, how much water is left in the trough?



- 14) The solid below is a hemisphere with a 90° slice removed. The radius of the hemisphere is 8 in.



The volume of the solid is

- | | |
|-----------------------|----------------------|
| <input type="radio"/> | 804 in ³ |
| <input type="radio"/> | 1072 in ³ |
| <input type="radio"/> | 1608 in ³ |
| <input type="radio"/> | 2144 in ³ |