

1

Each of two different-sized boxes is in the shape of a right rectangular prism. The volume of the larger box is 4 times the volume of the smaller box. The dimensions of the smaller box are represented below.

- length: l
- width: w
- height: h

Which of the following could represent the dimensions of the larger box?

- A. $l, 4w, 4h$
- B. $2l, 2w, h$
- C. $2l, 2w, 4h$
- D. $4l, 4w, 4h$

2

A mechanic has two pieces of sandpaper of different sizes. Each piece is in the shape of a circle. The radius of the larger circle is 4 times the radius of the smaller circle.

The area of the larger circle is how many times the area of the smaller circle?

- A. 2
- B. 4
- C. 8
- D. 16

Mark your answer here: 1. Ⓐ Ⓑ Ⓒ Ⓓ

Mark your answer here: 2. Ⓐ Ⓑ Ⓒ Ⓓ



3

Manuel is using a small paper rectangle and a large paper rectangle for an art project.

- The length of the small rectangle is half the length of the large rectangle.
- The width of the small rectangle is half the width of the large rectangle.

The area of the small rectangle is how many times the area of the large rectangle?

- A. $\frac{1}{16}$
- B. $\frac{1}{8}$
- C. $\frac{1}{4}$
- D. $\frac{1}{2}$

Mark your answer here: 3. (A)(B)(C)(D)

4

Dana drew two circles of different sizes. The area of the larger circle is 16 times the area of the smaller circle.

The radius of the larger circle is how many times the radius of the smaller circle?

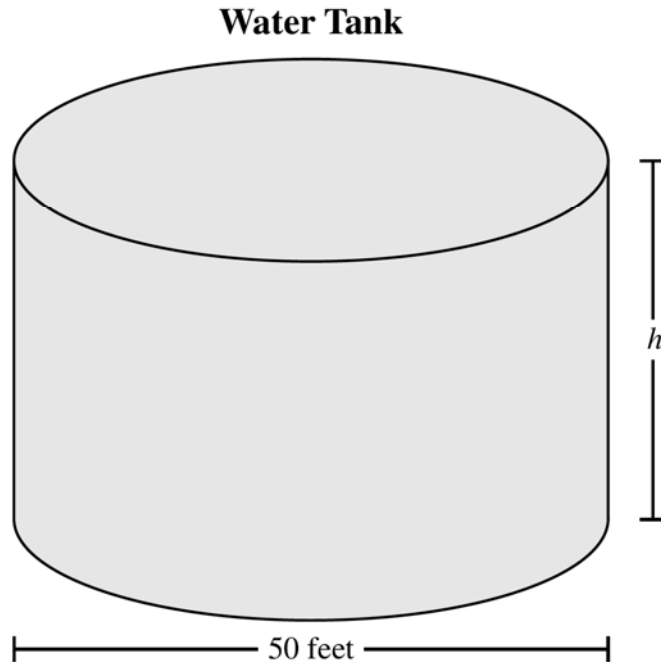
- A. 2
- B. 4
- C. 8
- D. 16

Mark your answer here: 4. (A)(B)(C)(D)



Directions: For the problem below, use a separate piece of paper to write your answers. Your teacher will not count anything you write on this page.

- 5 The town of Brookville has a water tank that is shaped like a right circular cylinder with a diameter of 50 feet, as shown below.



- What is the radius, in feet, of the water tank? Show or explain how you got your answer.
- The water tank has a volume of 58,960 cubic feet. What is h , the height, in feet, of the water tank? Show or explain how you got your answer.

The town's planning board wants to build a new water tank to meet the needs of the town's growing population. The new water tank will be shaped like a right circular cylinder with the same height as the old water tank, but the volume of the new water tank will be 3 times the volume of the old water tank.

- Based on the town's plan, what would be the **diameter**, in feet, of the new water tank? Show or explain how you got your answer.

