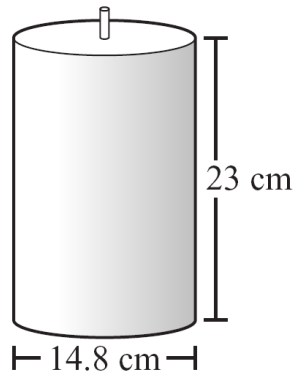


- 1 A cube has a volume of 120 cm^3 . Which of the following is closest to the length of an edge of the cube?
- A. 5 cm
 - B. 7 cm
 - C. 9 cm
 - D. 11 cm

Mark your answer here: 1. (A)(B)(C)(D)

- 2 A candle in the shape of a right circular cylinder is pictured below.

Mark your answer here: 2. (A)(B)(C)(D)



Based on the dimensions shown in the picture, which of the following is closest to the lateral surface area of the candle?

- A. 46 cm^2
- B. 170 cm^2
- C. 1100 cm^2
- D. 4000 cm^2

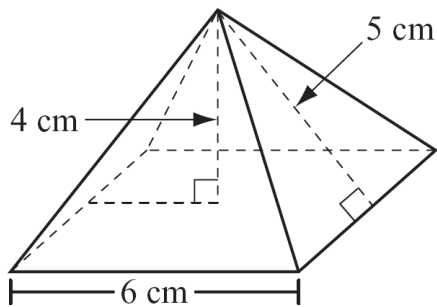


- 3 The Fancy Marble Company makes one type of spherical marble with a radius of 2 cm. The maximum error in measurement is 0.1 cm for the radius. Which of the following is closest to the minimum volume of one of these marbles?
- A. 7.95 cm³
 - B. 8.79 cm³
 - C. 28.72 cm³
 - D. 38.77 cm³

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

- 4 A right square pyramid and its dimensions are shown below.

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



What is the volume of the right square pyramid?

- A. 40 cm³
- B. 48 cm³
- C. 60 cm³
- D. 144 cm³



- 5 Two containers in the shape of right circular cylinders are equal in height. The radius of the larger container is 3 times the radius of the smaller container.

The volume of the larger container is how many times the volume of the smaller container?

- A. 3
- B. 6
- C. 9
- D. 27

Mark your answer here: 5. (A)(B)(C)(D)

- 6 A box in the shape of a right rectangular prism has a volume of 60 cubic inches. The height of the box is 3 inches, and the width is 4 inches.

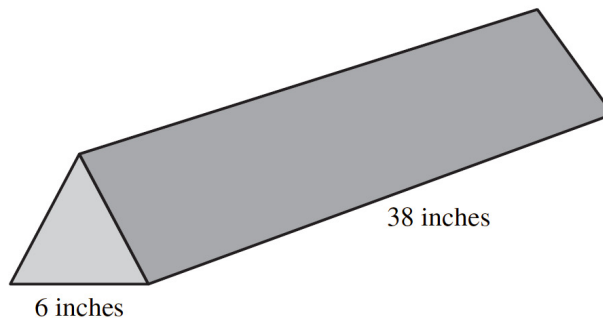
What is the length, in inches, of the box?

Write your answer here:

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.

7

An airfreight company uses a box in the shape of a triangular prism to pack blueprints, posters, and other items that can be rolled up to fit inside the box. Each base is an equilateral triangle. The dimensions of the box are shown below.



- What is the height of the equilateral triangles on either end of the box? Show or explain how you got your answer.
- What is the total surface area of the box? Show or explain how you got your answer.
- What is the volume of the box? (Use $V = Bh$, where B is the area of the base, and h is the height of the prism.) Show or explain how you got your answer.
- Another airfreight company uses a box shaped like a right circular cylinder for the same purposes. The cylinder is also 38 inches long, and each of its circular bases has a radius of 2 inches. Which of the two boxes has the greater volume? Show or explain how you got your answer.

