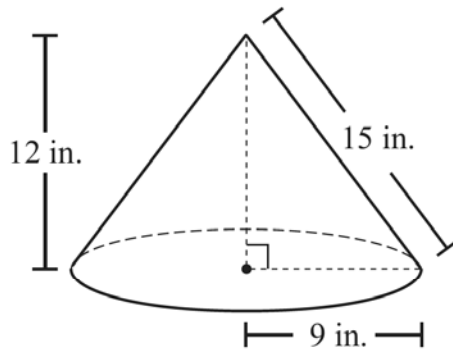


- 1 A sphere has a volume of $\frac{500}{3}\pi$ cubic centimeters. What is the total surface area, in square centimeters, of the sphere?
- A. 25π
 - B. 40π
 - C. 100π
 - D. 400π

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

- 2 A cap in the shape of a right circular cone is built on top of a chimney. A diagram representing the cap is shown below.

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



Based on the dimensions in the diagram, which of the following is closest to the lateral surface area of the cap?

- A. 212 sq. in.
- B. 339 sq. in.
- C. 424 sq. in.
- D. 565 sq. in.



3

Jessie has an aquarium that is shaped like a right rectangular prism with the following dimensions:

- height: 15 inches
- width: 20 inches
- length: 30 inches

What is the lateral surface area of a right rectangular prism with the dimensions of Jessie's aquarium?

- A. 260 sq. in.
- B. 750 sq. in.
- C. 1500 sq. in.
- D. 9000 sq. in.

Mark your answer here: 3. Ⓐ Ⓑ Ⓒ Ⓓ

4

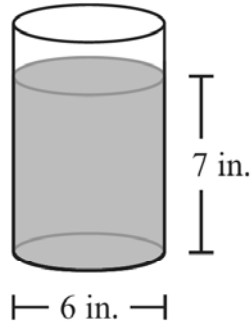
Each edge of a cube is 3 inches long. What is the surface area of the cube?

- A. 54 square inches
- B. 36 square inches
- C. 27 square inches
- D. 18 square inches

Mark your answer here: 4. Ⓐ Ⓑ Ⓒ Ⓓ



- 5 Maya has a container in the shape of a right circular cylinder. She poured lemonade into the container until the height of the lemonade was 7 inches, as shown in the diagram below.



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

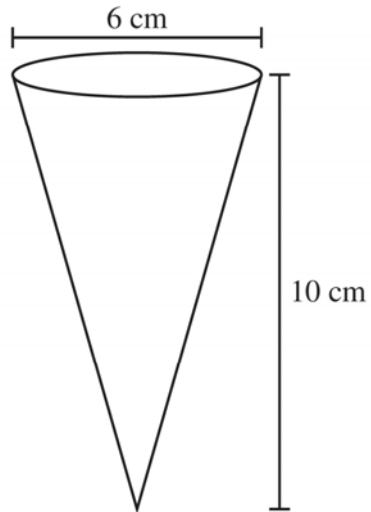
Based on the dimensions shown in the diagram, which of the following is closest to the volume of the lemonade in the container?

- A. 132 cubic inches
- B. 198 cubic inches
- C. 252 cubic inches
- D. 264 cubic inches



6

A paper cup in the shape of a right circular cone has a height of 10 centimeters and a diameter of 6 centimeters, as shown in the drawing below.



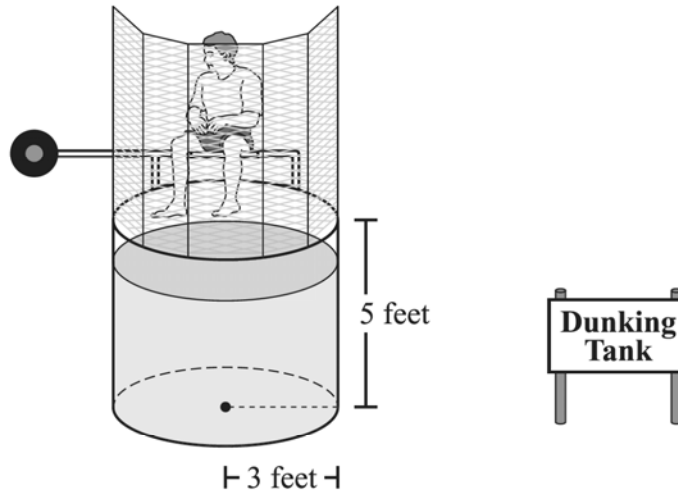
What is the volume, in cubic centimeters, of the cup?

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 A water dunking tank at a carnival is in the shape of a right circular cylinder. Its height is 5 feet, and the radius of each base is 3 feet, as shown in the picture below.



- a. What is the lateral surface area, in square feet, of the tank? Show your work.
- b. On the first day of the carnival, the dunking tank was filled with water to a height of 4 feet. What was the volume, in cubic feet, of the water in the tank on the first day of the carnival? Show your work.

At the end of the second day of the carnival, some water was drained from the tank. The volume of water drained was 35.3 cubic feet.

- c. Using your answer from part (b), determine the height, in feet, of the water remaining in the tank after the water was drained at the end of the second day. Show your work.

The water that was drained from the tank was poured into containers, each in the shape of a right rectangular prism. Each container was 2 feet in length, 1.5 feet in width, and 3 feet in height.

- d. What was the **least** number of containers needed to hold all the water that was drained at the end of the second day? Show your work.

