

Lesson 12 Practice Problems

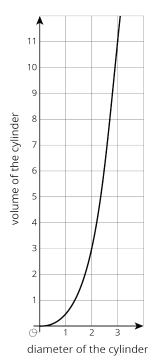
1. a. Sketch a cube and label its side length as 4 cm (this will be Cube A).

b. Sketch a cube with sides that are twice as long as Cube A and label its side length (this will be Cube B).

- c. Find the volumes of Cube A and Cube B.
- 2. Two paper drink cups are shaped like cones. The small cone can hold 6 oz of water. The large cone is $\frac{4}{3}$ the height and $\frac{4}{3}$ the diameter of the small cone. Which of these could be the amount of water the large cone holds?
 - A. 8 cm
 - B. 14 oz
 - C. 4.5 oz
 - D. 14 cm



- 3. The graph represents the volume of a cylinder with a height equal to its radius.
 - a. When the diameter is 2 cm, what is the radius of the cylinder?
 - b. Express the volume of a cube of side length s as an equation.
 - c. Make a table for volume of the cube at s=0 cm, s=1 cm, s=2 cm, and s=3 cm.
 - d. Which volume is greater: the volume of the cube when s=3 cm, or the volume of the cylinder when its diameter is 3 cm?



(From Unit 5, Lesson 7.)

- 4. Select **all** the points that are on a line with slope 2 that also contains the point (2, -1).
 - A. (3, 1)
 - B. (1, 1)
 - C. (1, -3)
 - D.(4,0)
 - E. (6,7)

(From Unit 3, Lesson 10.)



- 5. Several glass aquariums of various sizes are for sale at a pet shop. They are all shaped like rectangular prisms. A 15-gallon tank is 24 inches long, 12 inches wide, and 12 inches tall. Match the dimensions of the other tanks with the volume of water they can each hold.
 - A. Tank 1: 36 inches long, 18 inches wide, and 12 inches tall
- 1. 5 gallons
- B. Tank 2: 16 inches long, 8 inches wide, and 10 inches tall
- 2. 10 gallons
- C. Tank 3: 30 inches long, 12 inches wide, and 12 inches tall
- 4. 30 gallons

3. 20 gallons

D. Tank 4: 20 inches long, 10 inches wide, and 12 inches tall

6. Solve:
$$\begin{cases} y = -2x - 20 \\ y = x + 4 \end{cases}$$

(From Unit 4, Lesson 14.)