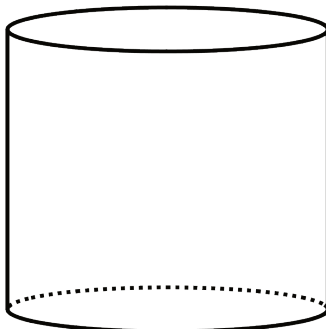


Lesson 20 Practice Problems

1. The volume of this cylinder is 175π cubic units.



What is the volume of a cone that has the same base area and the same height?

(From Unit 6, Lesson 19.)

2. A cone has volume 12π cubic inches. Its height is 4 inches. What is its radius?
3. A cone has volume 3π .
- If the cone's radius is 1, what is its height?
 - If the cone's radius is 2, what is its height?
 - If the cone's radius is 5, what is its height?
 - If the cone's radius is $\frac{1}{2}$, what is its height?
 - If the cone's radius is r , then what is the height?

4. Three cylinders have a height of 8 cm. Cylinder 1 has a radius of 1 cm. Cylinder 2 has a radius of 2 cm. Cylinder 3 has a radius of 3 cm. Find the volume of each cylinder.

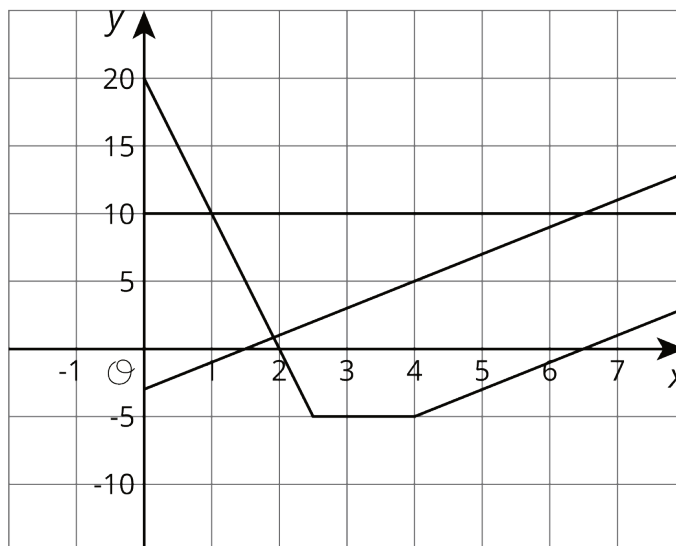
(From Unit 6, Lesson 18.)

5. A gas company's delivery truck has a cylindrical tank that is 14 feet in diameter and 40 feet long.

- a. Sketch the tank, and mark the radius and the height.
- b. How much gas can fit in the tank?

(From Unit 6, Lesson 18.)

6. Three people are playing near the water. Person A stands on the dock. Person B starts at the top of a pole and ziplines into the water, then climbs out of the water. Person C climbs out of the water and up the zipline pole. Match the people to the graphs where the horizontal axis represents time in seconds and the vertical axis represents height above the water level in feet.



(From Unit 6, Lesson 6.)

7. A room is 15 feet tall. An architect wants to include a window that is 6 feet tall. The distance between the floor and the bottom of the window is b feet. The distance between the ceiling and the top of the window is a feet. This relationship can be described by the equation

$$a = 15 - (b + 6)$$

- Which variable is independent based on the equation given?
- If the architect wants b to be 3, what does this mean? What value of a would work with the given value for b ?
- The customer wants the window to have 5 feet of space above it. Is the customer describing a or b ? What is the value of the other variable?

(From Unit 6, Lesson 3.)

8. Select **all** of the given points in the coordinate plane that lie on the graph of the linear equation $4x - y = 3$.

- $(-1, -7)$
- $(0, 3)$
- $(\frac{3}{4}, 0)$
- $(1, 1)$
- $(2, 5)$
- $(4, -1)$

(From Unit 5, Lesson 10.)