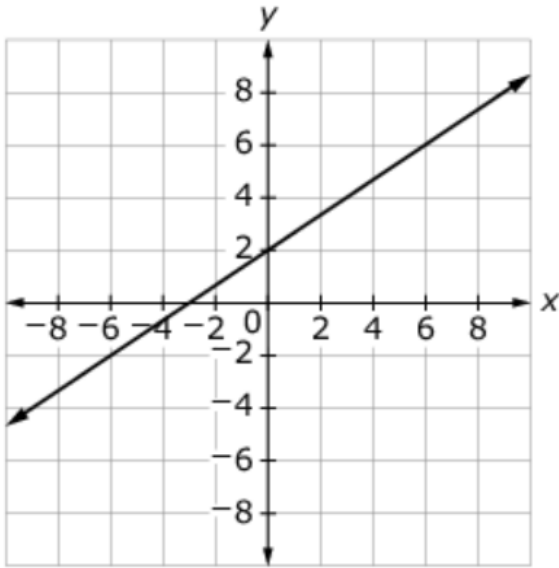


# Warm-up

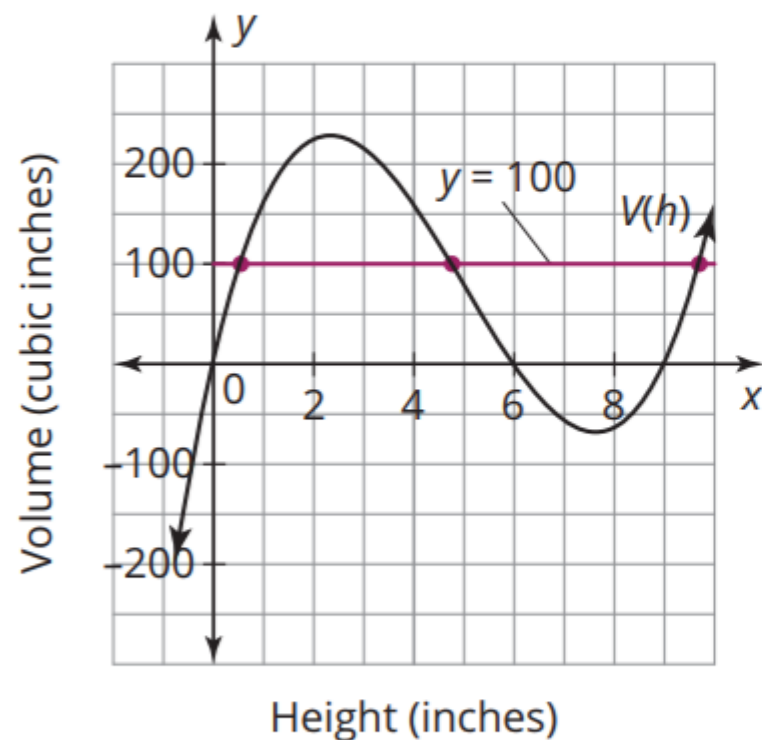
Choose the ordered pair that is a solution to the equation represented by the graph.



- Ⓐ  $(0, -3)$
- Ⓑ  $(2, 0)$
- Ⓒ  $(2, 2)$
- Ⓓ  $(-3, 0)$

## Worked Example

You can determine the possible heights from the graph of  $V(h)$ .  
Suppose the given volume of a planter box is 100 cubic inches.



- Draw a horizontal line at  $y = 100$ .
- Identify each point where  $V(h)$  intersects with  $y = 100$ , or where  $V(h) = 100$ .

The first point of intersection is represented using function notation as  $V(0.54) = 100$ .

3. Consider the worked example.

- a. Use graphing technology to determine where  $V(h) = 100$ . Then write the intersection points in function notation. What do the intersection points mean in terms of this problem situation?
- b. How many differently sized planter boxes can Plant-A-Seed make to fill this order? Explain your reasoning.

4. A neighborhood beautifying committee would like to purchase a variety of planter boxes with volumes of 175 cubic inches to add to business windowsill store fronts. Determine the planter box dimensions that the Plant-A-Seed Company can create for the committee. Show all work and explain your reasoning.

5. Plant-A-Seed's intern claims that he can no longer complete an order because he spilled a cup of coffee on the sales ticket. Help him complete the order by determining the missing dimensions from the information that is still visible. Explain how you determined possible unknown dimensions of each planter box.

Plant-A-Seed Sales Ticket	
Base Area: 12 square inches	
Height:	
Length:	
Width:	
Volume:	

A customer sent this email:

To Whom It May Concern,

I would like to purchase several planter boxes, all with a height of 5 inches. Can you make one that holds 100 cubic inches of dirt? Please contact me at your earliest convenience.

Thank you,  
Muriel Jenkins



Think

about:

How is the volume  
function built in this  
problem?

**6. Write a response to this customer, showing all calculations.**