## Unit 2 Lesson 1: Let’s Make a Box

### 1 Which One Doesn’t Belong: Boxes (Warm up)

#### Student Task Statement

Which one doesn’t belong?

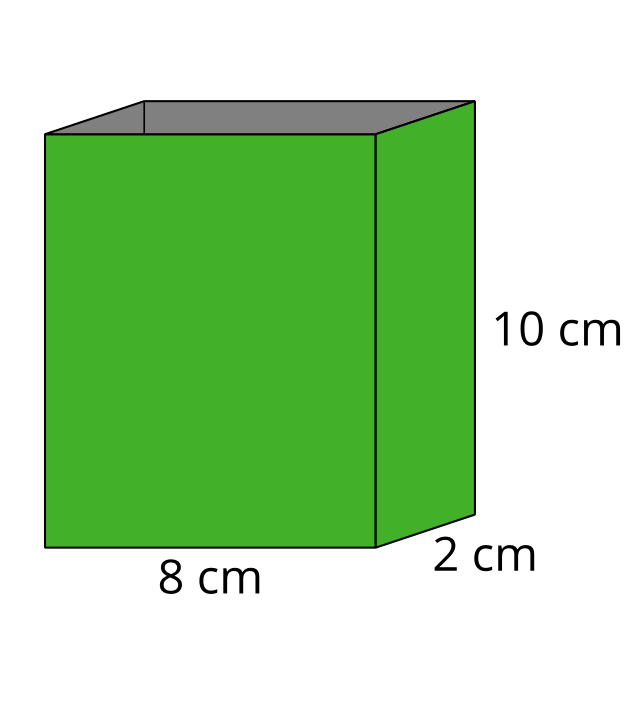
A.

length: 4 cm

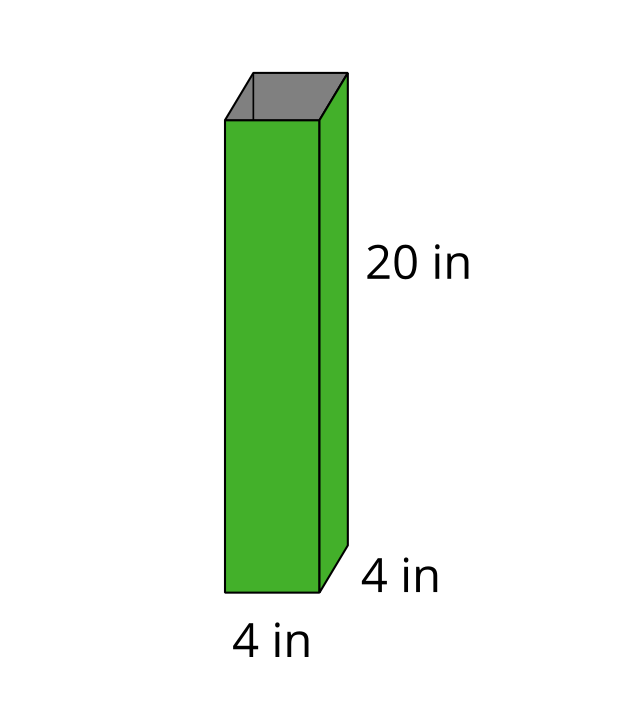
width: 8 cm

height: 10 cm

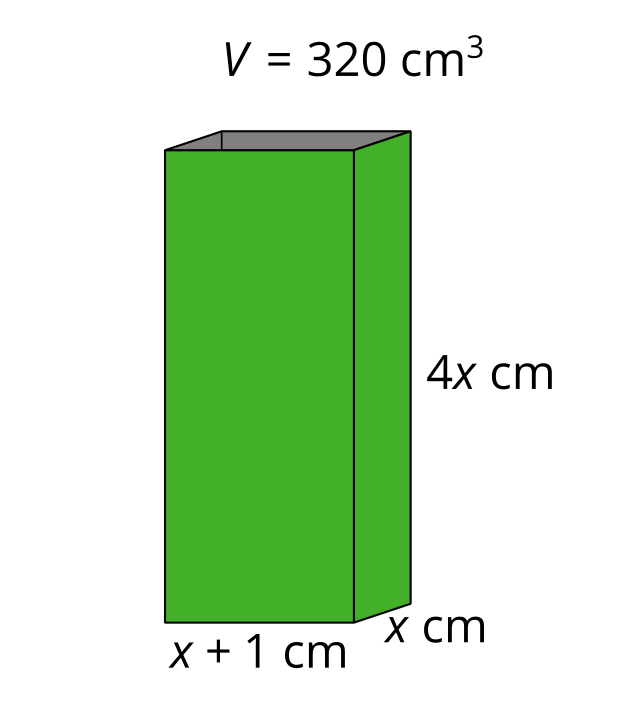
B.



C.

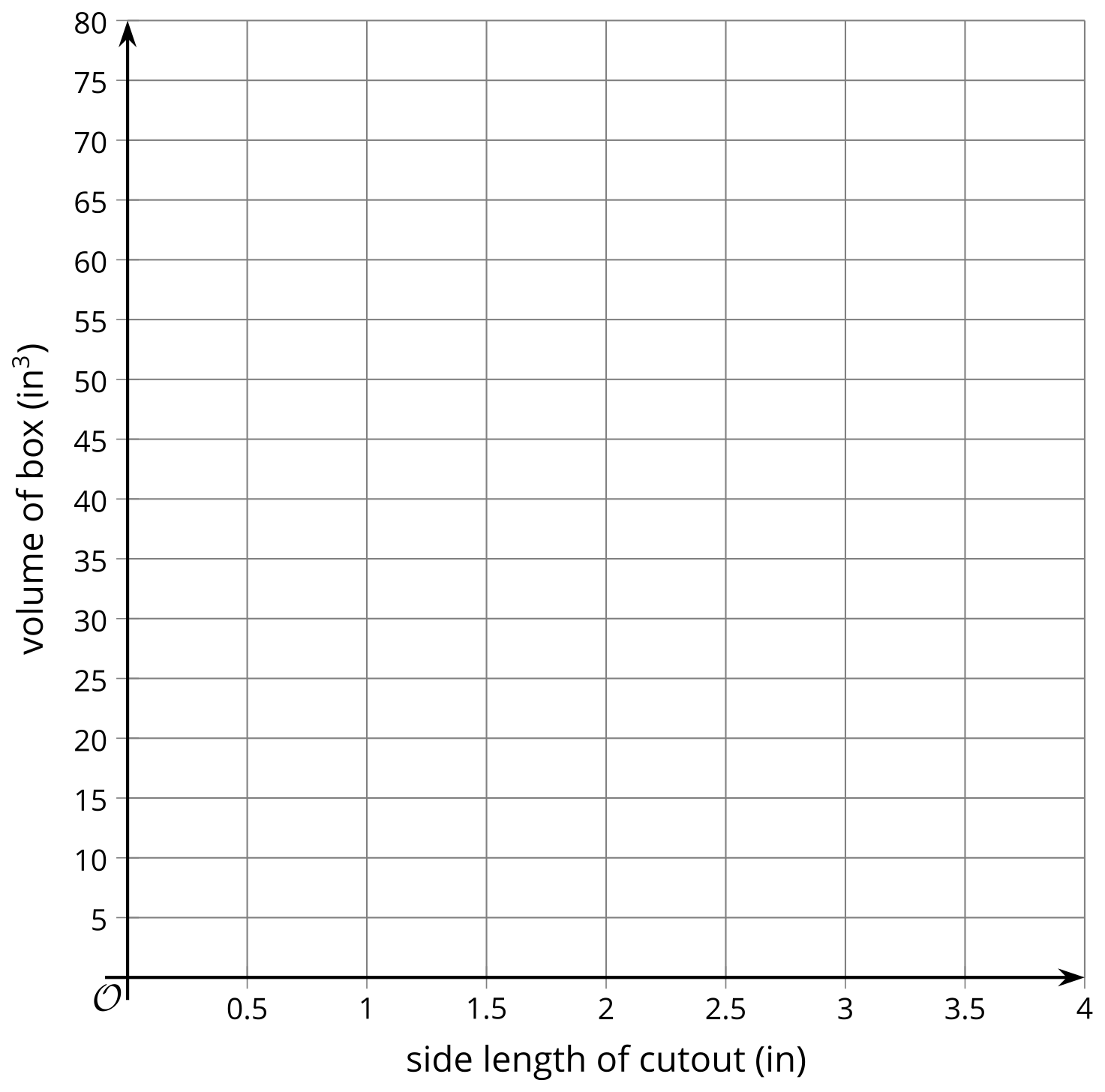


D.



### 2 Building Boxes

#### Images for Launch



#### Student Task Statement

Your teacher will give you some supplies.

1. Construct an open-top box from a sheet of paper by cutting out a square from each corner and then folding up the sides.
2. Calculate the volume of your box, and complete the table with your information.

| side length of square cutout (in) | length (in) | width (in) | height (in) | volume of box (in3) |
| --- | --- | --- | --- | --- |
| 1 |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

### 3 Building the Biggest Box

#### Student Task Statement



1. The volume in cubic inches of the open-top box is a function of the side length in inches of the square cutouts. Make a plan to figure out how to construct the box with the largest volume.

* Pause here so your teacher can review your plan.

1. Write an expression for .
2. Use graphing technology to create a graph representing . Approximate the value of that would allow you to construct an open-top box with the largest volume possible from one piece of paper.



© CC BY 2019 by Illustrative Mathematics®