

Problem Solving • Compare Volumes



COMMON CORE STANDARD—5.MD.C.5b
Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.

Make a table to help you solve each problem.

1. Amrita wants to make a mold for a candle. She wants the shape of the candle to be a rectangular prism with a volume of exactly 28 cubic centimeters. She wants the sides to be in whole centimeters. How many different molds can she make?

_____ 10 molds _____

2. Amrita decides that she wants the molds to have a square base. How many of the possible molds can she use?

3. Raymond wants to make a box that has a volume of 360 cubic inches. He wants the height to be 10 inches and the other two dimensions to be whole numbers of inches. How many different-sized boxes can he make?

4. Jeff put a small box that is 12 inches long, 8 inches wide, and 4 inches tall inside a box that is 20 inches long, 15 inches wide, and 9 inches high. How much space is left in the larger box?

5. Mrs. Nelson has a rectangular flower box that is 5 feet long and 2 feet tall. She wants the width of the box to be no more than 5 feet. If the width is a whole number, what are the possible volumes for the flower box?

6. **WRITE** *Math* Using drawings of rectangular prisms, define in your own words, perimeter, area, and volume. Use color pencils to highlight what each term refers to.

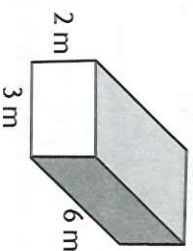
Lesson Check (5.MD.C.5b)

1. Corey bought a container shaped like a rectangular prism to hold his photo collection. If the container's dimensions are 6 in. by 8 in. by 10 in., what is its volume?
2. Aleka has a box for keepsakes that has a volume of 576 cubic inches. The length of the box is 12 inches and the width is 8 inches. What is the height of the box?

Spiral Review (5.MD.A.1, 5.MD.C.3, 5.MD.C.5a, 5.MD.C.5b)

3. A movie is 2 hours and 28 minutes long. It starts at 7:50 P.M. At what time will the movie end?
4. How many rectangular faces does a pentagonal pyramid have?

5. An aquarium is in the shape of a rectangular prism. Its length is 24 inches, its width is 12 inches, and its height is 14 inches. How much water can the aquarium hold?
6. What is the volume of the rectangular prism shown?





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