

PROBLEM SOLVING
Lesson 11.11

Name _____

Problem Solving • Compare Volumes

COMMON CORE STANDARD CC.5.MD.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. Amita 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. Amita 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. Sophina bought 3 yards of trim to put around a rectangular scarf. She wants the width of the scarf to be a whole number that is at least 6 inches and at most 12 inches. If she uses all the trim, what are the possible dimensions of her scarf? Write your answers in inches.

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

- Corey bought a container shaped like a rectangular prism to hold his photo collection. If the container has a volume of 480 cubic inches, which of the following could be its dimensions in inches?
 - (A) 3 in. by 8 in. by 10 in.
 - (B) 6 in. by 4 in. by 12 in.
 - (C) 6 in. by 8 in. by 10 in.
 - (D) 8 in. by 4 in. by 8 in.
- 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?
 - (A) 6 inches
 - (B) 20 inches
 - (C) 48 inches
 - (D) 72 inches

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

- A movie is 2 hours and 28 minutes long. It starts at 7:50 P.M. At what time will the movie end? (Lesson 10.7)
 - (A) 9:18 P.M.
 - (B) 9:78 P.M.
 - (C) 10:08 P.M.
 - (D) 10:18 P.M.
- Which of the following does NOT have any rectangular faces? (Lesson 11.5)
 - (A) hexagonal prism
 - (B) pentagonal pyramid
 - (C) rectangular prism
 - (D) square pyramid
- 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? (Lesson 11.10)
 - (A) 168 cubic inches
 - (B) 288 cubic inches
 - (C) 336 cubic inches
 - (D) 4,032 cubic inches
- What is the volume of the rectangular prism shown? (Lesson 11.9)
 - (A) 11 m^3
 - (B) 18 m^3
 - (C) 36 m^3
 - (D) 360 m^3

