

Grade 5 - Volume of Rectangular Prisms - Test

Common Core 5.MD.C.3, 5.MD.C.4, 5.MD.C.5 · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

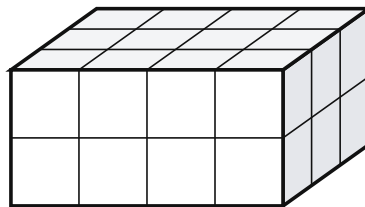
This 45-minute test covers unit cubes, the volume formulas for rectangular prisms, missing dimensions, and composite solids (5.MD.C.3 to 5.MD.C.5). There are 9 questions worth 20 points. Show your work and write cubic units.

About this test

- Grade: Grade 5
- Chapter: Volume of Rectangular Prisms
- Standards: 5.MD.C.3, 5.MD.C.4, 5.MD.C.5
- Time: 45 minutes
- Total: 20 points

Question 1 - Counting unit cubes [2 pts]

Solve. The prism is built from unit cubes.



A rectangular prism.

- How many cubes are in the bottom layer? (1 point)
- What is the volume of the prism? (1 point)

Question 2 - Volume from edges [2 pts]

Find the volume of a rectangular prism with length 9 ft, width 4 ft and height 3 ft.

Question 3 - Base area and height [2 pts]

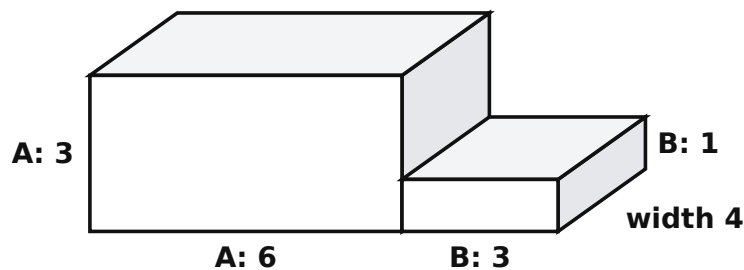
Solve. The base of a prism has an area of 35 square centimeters. The prism is 6 centimeters high. Find its volume.

Question 4 - Missing height [2 pts]

Solve. A prism has volume 224 in^3 . Its length is 8 in and its width is 7 in. Find its height.

Question 5 - Composite solid [3 pts]

Solve. The solid is made of two rectangular prisms, A and B. The numbers show length, width and height of each part.



A composite solid made of prism A and prism B.

- Find the volume of prism A. (1 point)
- Find the volume of prism B. (1 point)
- Find the volume of the whole solid. (1 point)

Question 6 - Compare packages [2 pts]

Solve. A cereal box is 8 cm by 2 cm by 12 cm. A juice box is 5 cm by 4 cm by 10 cm. Which has the greater volume, and by how much?

Question 7 - Aquarium [3 pts]

Solve. An aquarium is 24 in long, 12 in wide and 10 in high.

- What is the volume of the aquarium? (1 point)

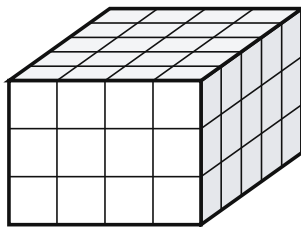
- b. The water is 8 in deep. What is the volume of the water? (1 point)
- c. How many more cubic inches of water would fill the aquarium? (1 point)

Question 8 - Doubling edges [2 pts]

Solve. Jamal says that doubling only the height of a prism doubles its volume. Mei says that doubling the length, the width and the height all together also doubles the volume. Who is correct? Use a prism that is 2 by 3 by 4 to explain.

Question 9 - Stacked cubes [2 pts]

Solve. A prism is built from 1-centimeter cubes. The base has 5 rows of 4 cubes, and there are 3 layers.



A rectangular prism.

- a. Find the volume of the prism. (1 point)
- b. How many cubes are needed to add one more layer? (1 point)