

Grade 5 - Volume of Rectangular Prisms - Quiz

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

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

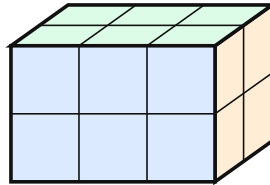
Try these 10 multiple-choice questions on the volume of rectangular prisms and composite solids. Choose the single best answer, then read the explanation to learn from the typical mistakes.

Grade 5 · Common Core State Standards: **5.MD.C.3, 5.MD.C.4, 5.MD.C.5**

Questions

Question 1

What is the volume of the prism?



A rectangular prism.

- A. 7 cubic units
- B. 10 cubic units
- C. 6 cubic units
- D. 12 cubic units

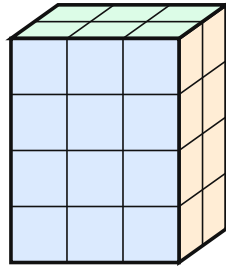
Question 2

A prism is 5 cm long, 4 cm wide and 3 cm high. What is its volume?

- A. 12 cubic cm
- B. 20 cubic cm
- C. 60 cubic cm
- D. 120 cubic cm

Question 3

How many unit cubes build this prism?



A rectangular prism.

- A. 24 cubes
- B. 9 cubes
- C. 12 cubes
- D. 18 cubes

Question 4

The base of a prism has area 30 square feet and its height is 4 feet. What is the volume?

- A. 34 cubic ft
- B. 120 cubic ft
- C. 60 cubic ft
- D. 7.5 cubic ft

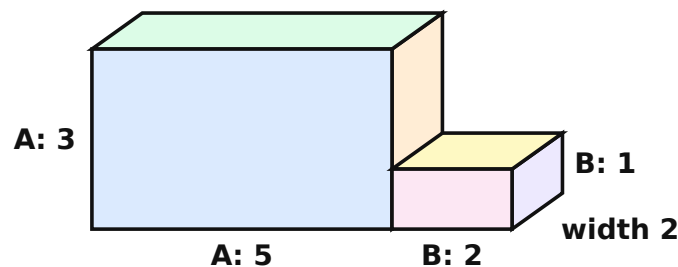
Question 5

A box has volume 96 cubic feet, length 6 feet and width 4 feet. What is its height?

- A. 16 ft
- B. 4 ft
- C. 24 ft
- D. 6 ft

Question 6

What is the volume of the whole solid?



A composite solid made of prism A and prism B.

- A. 30 cubic units
- B. 36 cubic units
- C. 34 cubic units
- D. 24 cubic units

Question 7

Which unit is used to measure volume?

- A. square inches
- B. inches
- C. pounds
- D. cubic inches

Question 8

A fish tank is 15 in long, 8 in wide and 10 in high. What is its volume?

- A. 33 cubic in
- B. 1,200 cubic in
- C. 120 cubic in
- D. 600 cubic in

Question 9

A cube has edges of 5 feet. What is its volume?

- A. 125 cubic ft
- B. 15 cubic ft
- C. 25 cubic ft
- D. 75 cubic ft

Question 10

A solid is made of two prisms with volumes 48 cubic ft and 36 cubic ft. What is the volume of the whole solid?

- A. 84 cubic ft
- B. 12 cubic ft
- C. 48 cubic ft
- D. 1,728 cubic ft

Answers

1. **D** - One layer has $3 \times 2 = 6$ cubes and there are 2 layers, so $6 \times 2 = 12$. Adding $3 + 2 + 2 = 7$ is a common mistake.
2. **C** - $5 \times 4 \times 3 = 60$. Multiplying only two edges gives 20, which is the base area.
3. **A** - One layer has $3 \times 2 = 6$ cubes, and there are 4 layers, so $6 \times 4 = 24$.
4. **B** - $V = B \times h = 30 \times 4 = 120$. Adding gives 34, and dividing gives 7.5.
5. **B** - The base area is $6 \times 4 = 24$ and $96 \div 24 = 4$. Dividing by only one edge gives 16 or 24.
6. **C** - Prism A is $5 \times 2 \times 3 = 30$ and prism B is $2 \times 2 \times 1 = 4$. Add: $30 + 4 = 34$.
7. **D** - Volume counts cubes, so it is measured in cubic units like cubic inches. Square inches measure area.
8. **B** - $15 \times 8 \times 10 = 1,200$. Adding the edges gives 33.
9. **A** - $5 \times 5 \times 5 = 125$. Multiplying 5×3 gives 15, a mistake.
10. **A** - Add the two volumes: $48 + 36 = 84$. Subtracting gives 12, and multiplying gives 1,728.

Remember

- A unit cube has volume 1 cubic unit.
- Volume is measured in cubic units such as cm^3 , in^3 and ft^3 .
- $V = l \times w \times h$, and $V = B \times h$ where B is the base area.
- A composite solid made of two prisms has volume equal to the sum of the two volumes.
- Volume = (cubes in one layer) $\times$ (number of layers).