

Grade 6 - Volume of Prisms with Fractional Edges - Quiz

Common Core 6.G.A.2 · maths-pdf.fr/en/

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

This quiz has 10 multiple-choice questions on the volume of right rectangular prisms and fractional unit cubes (Common Core 6.G.A.2). Choose one answer for each and read the explanation.

Grade 6 · Common Core State Standards: **6.G.A.2**

Questions

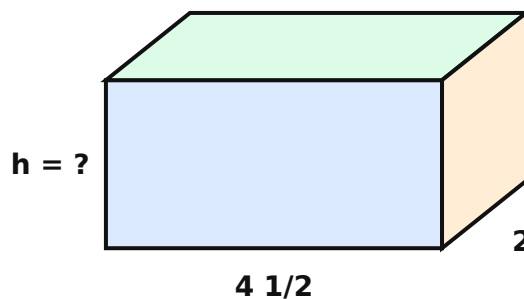
Question 1

What is the volume of a cube with edge 4 cm?

- A. 16 cm^3
- B. 12 cm^3
- C. 48 cm^3
- D. 64 cm^3

Question 2

A prism has a volume of 18 cubic units, a length of $4\frac{1}{2}$ units, and a width of 2 units. What is its height?



A prism with volume 18.

- A. 9 units
- B. 2 units
- C. 4 units
- D. $\frac{1}{2}$ unit

Question 3

A prism is filled with cubes of edge $\frac{1}{3}$ unit. Each cube has what volume?

- A. $\frac{1}{27}$ unit³
- B. $\frac{1}{9}$ unit³
- C. $\frac{1}{6}$ unit³
- D. $\frac{1}{3}$ unit³

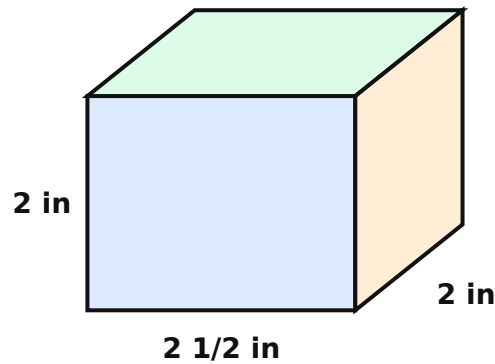
Question 4

A box has a base area of 12 and a volume of 60. What is the height?

- A. 5
- B. 48
- C. 72
- D. 720

Question 5

What is the volume of this box?



A box.

- A. 6.5 in^3
- B. 10 in^3
- C. 20 in^3
- D. 5 in^3

Question 6

Which formula gives the volume of a rectangular prism?

- A. $V = \ell + w + h$
- B. $V = 2\ell w$
- C. $V = \ell wh$
- D. $V = \ell w$

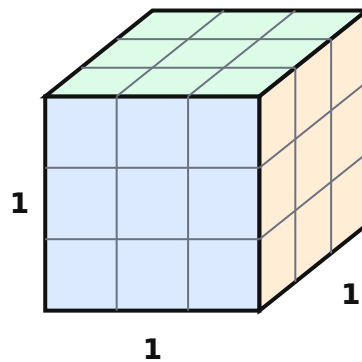
Question 7

A tank is 4 ft by 3 ft by 2 ft. How many cubic feet of water fill it halfway?

- A. 12
- B. 24
- C. 6
- D. 9

Question 8

How many cubes with edge $\frac{1}{3}$ unit fit in a 1 by 1 by 1 cube?



A unit cube.

- A. 3
- B. 9
- C. 12
- D. 27

Question 9

A box has volume 90, length 6, and width 5. What is its height?

- A. 11
- B. 3
- C. 15
- D. 540

Question 10

A crate measures 6 feet by 4 feet by 3 feet. It is half full of sand. What is the volume of the sand?

- A. 72 cubic feet
- B. 18 cubic feet
- C. 36 cubic feet
- D. 144 cubic feet

Answers

1. **D** - $4 \times 4 \times 4 = 64$. The area of one face is 16.
2. **B** - $18 / (4.5 \times 2) = 18 \div 9 = 2$. Multiplying 4.5 by 2 only gives the base area, 9.
3. **A** - $(1/3)(1/3)(1/3) = 1/27$.
4. **A** - $V = Bh$, so $h = 60 \div 12 = 5$.
5. **B** - $2.5 \times 2 \times 2 = 10$.
6. **C** - Multiply length, width, and height. The product $l \times w$ is only the base area.
7. **A** - Full volume = 24, half is 12.
8. **D** - $3 \times 3 \times 3 = 27$, and $27 \times 1/27 = 1$.
9. **B** - $90 / (6 \times 5) = 3$.
10. **C** - The crate holds $6 \times 4 \times 3 = 72$, and half of that is 36.

Remember

- Volume is the number of cubic units that fill a solid.
- $V = lwh$ or $V = Bh$ for a right rectangular prism.
- Fractional edges work the same way: multiply the fractions.
- A cube with edge $1/2$ has volume $1/8$, and 8 of them fill a unit cube.
- To find a missing edge, divide the volume by the product of the other edges.