

Grade 7 · Area, Surface Area and Volume of Prisms · Quiz

Common Core 7.G.B.6 · mathovore.fr

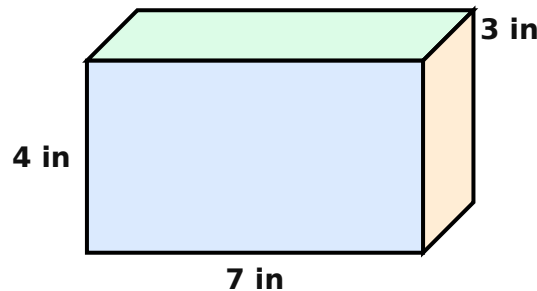
Name: _____ Date: ____/____/____ Score: _____

This ten-question multiple-choice quiz practices composite area, volume, and surface area from Common Core standard 7.G.B.6. Exactly one option is correct in each question. The explanation shows the calculation and names the typical mistake behind the wrong choices.

Grade 7 Common Core: 7.G.B.6

Questions

Question 1

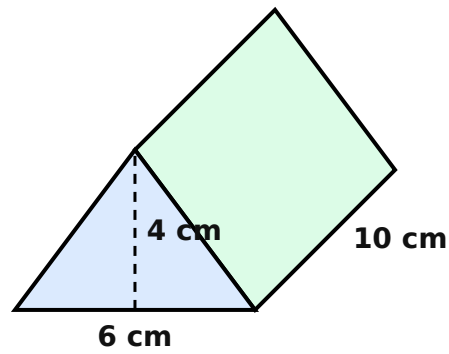


Quiz figure.

What is the volume of the prism?

- A. 14 in^3
- B. 122 in^3
- C. 84 in^3
- D. 168 in^3

Question 2

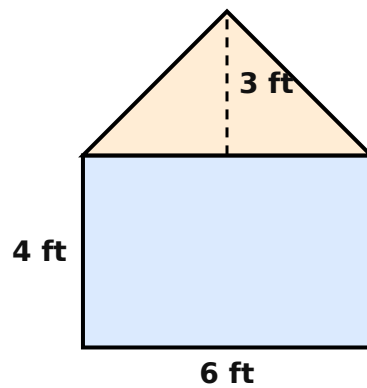


Quiz figure.

What is the volume of the triangular prism?

- A. 240 cm^3
- B. 120 cm^3
- C. 60 cm^3
- D. 24 cm^3

Question 3



Quiz figure.

What is the area of the figure?

- A. 33 ft^2
- B. 42 ft^2
- C. 27 ft^2
- D. 48 ft^2

Question 4

What is the surface area of a cube with edges of 5 cm ?

- A. 125 cm^2
- B. 30 cm^2
- C. 100 cm^2
- D. 150 cm^2

Question 5

A prism has a base area of 18 cm^2 and a height of 7 cm . What is its volume?

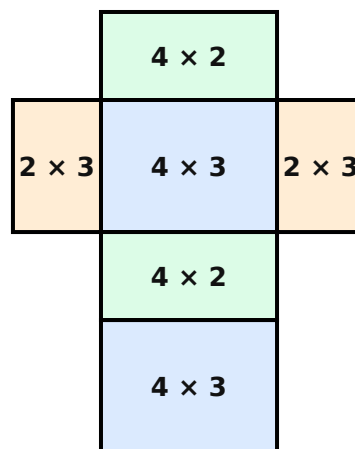
- A. 126 cm^3
- B. 25 cm^3
- C. 63 cm^3
- D. 252 cm^3

Question 6

A rectangular prism has a 12 ft by 5 ft base and a volume of 300 ft^3 . What is its height?

- A. 25 ft
- B. 5 ft
- C. 60 ft
- D. 17 ft

Question 7



Quiz figure.

The net folds into a rectangular prism. What is its surface area?

- A. 24 units^2
- B. 26 units^2
- C. 104 units^2

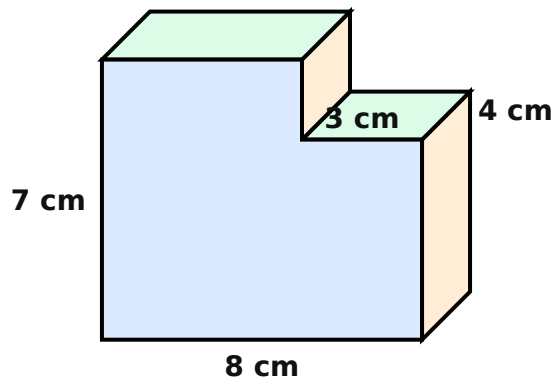
D. 52 units²

Question 8

A triangular prism has two triangular bases, each with area 10 in^2 . The three rectangular faces have a total area of 84 in^2 . What is the surface area?

- A. 94 in^2
- B. 188 in^2
- C. 104 in^2
- D. 840 in^2

Question 9



Quiz figure.

What is the volume of the solid?

- A. 224 cm^3
- B. 50 cm^3
- C. 100 cm^3
- D. 200 cm^3

Question 10

A fish tank is 20 in long, 10 in wide, and 12 in tall. Maya fills it with water to $\frac{3}{4}$ of its height. How much water is in the tank?

- A. $2,400 \text{ in}^3$
- B. $1,200 \text{ in}^3$
- C. $1,800 \text{ in}^3$
- D. 600 in^3

Answer key

1. **C** - $V = 7 \times 3 \times 4 = 84$. The value 14 adds the edges, and 122 is the surface area.
2. **B** - The base area is $\frac{1}{2} \times 6 \times 4 = 12$, so $V = 12 \times 10 = 120$. Forgetting the $\frac{1}{2}$ gives 240.
3. **A** - Rectangle: $6 \times 4 = 24$. Triangle: $\frac{1}{2} \times 6 \times 3 = 9$. Total 33. Using $6 \times 3 = 18$ for the triangle gives 42.
4. **D** - A cube has 6 square faces: $6 \times 5^2 = 150$. The value 125 is the volume, and 100 counts only 4 faces.
5. **A** - $V = Bh = 18 \times 7 = 126$. Adding gives 25, and halving the product gives 63.
6. **B** - $12 \times 5 \times h = 300$, so $60h = 300$ and $h = 5$. Dividing by only one side gives 25 or 60.
7. **D** - The faces have areas 8, 12, 8, 12, 6, 6, which add up to 52. The value 24 is the volume, and 26 counts only one face of each pair.
8. **C** - Add all faces: $10 + 10 + 84 = 104$. Counting only one base gives 94.
9. **D** - The L-shaped face has area $8 \times 7 - 3 \times 2 = 50$, so $V = 50 \times 4 = 200$. Ignoring the notch gives 224.
10. **C** - Water depth: $\frac{3}{4} \times 12 = 9$, so $V = 20 \times 10 \times 9 = 1,800$. The full tank holds 2,400.

Remember:

- Area of a triangle: $A = \frac{1}{2}bh$.
- Volume of a right prism: $V = Bh$.
- Surface area of a right prism: $SA = 2B + Ph$.
- Area uses square units, and volume uses cubic units.
- Break composite figures and solids into simple parts, then add.