



# Volume of Rectangular Prisms

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Grade: Grade 5

## Part A: Multiple Choice

Circle the best answer for each question.

1. A prism is  $5 \times 4 \times 6$  cm. If the width is doubled, what is the new volume?

- A)  $120 \text{ cm}^3$
- B)  $240 \text{ cm}^3$
- C)  $480 \text{ cm}^3$
- D)  $360 \text{ cm}^3$

2. A rectangular box holds exactly  $300 \text{ cm}^3$ . Which set of dimensions could be correct?

- A)  $10 \times 6 \times 5$  cm
- B)  $10 \times 5 \times 5$  cm
- C)  $15 \times 5 \times 3$  cm
- D)  $12 \times 5 \times 6$  cm

3. A warehouse floor is  $20 \text{ m} \times 15 \text{ m}$ . Crates stacked 4 m high fill the entire space. What is the total volume?

- A)  $300 \text{ m}^3$
- B)  $600 \text{ m}^3$
- C)  $1,200 \text{ m}^3$
- D)  $1,500 \text{ m}^3$

4. Prism P is  $6 \times 8 \times 3$  cm and Prism Q is  $9 \times 4 \times 3$  cm. How do their volumes compare?

- A) P is larger by  $36 \text{ cm}^3$
- B) Q is larger by  $36 \text{ cm}^3$
- C) They are equal
- D) P is larger by  $12 \text{ cm}^3$

## Part B: Fill in the Blank

Write the correct answer on each line.

1. A prism is  $4 \text{ cm} \times 5 \text{ cm} \times 3 \text{ cm}$ . If every dimension is doubled, the new volume is \_\_\_\_\_  $\text{cm}^3$ .

2. A freezer is  $5 \text{ ft} \times 3 \text{ ft} \times 2 \text{ ft}$ . Two identical freezers have a combined volume of \_\_\_\_\_  $\text{ft}^3$ .

3. A rectangular garden bed is 10 ft long and 4 ft wide. To hold  $120 \text{ ft}^3$  of soil, it must be \_\_\_\_\_ ft deep.

4. A cube has a volume of  $512 \text{ cm}^3$ . Each edge is \_\_\_\_\_ cm long.

5. A T-shaped solid has a bottom piece  $10 \times 4 \times 2$  cm and a top piece  $4 \times 4 \times 3$  cm. Its total volume is \_\_\_\_\_  $\text{cm}^3$ .

## Answer Key · Volume of Rectangular Prisms · Grade: Grade 5

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### Part A: Multiple Choice

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- A)  $10 \times 6 \times 5 \text{ cm}$
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3. A warehouse floor is  $20 \text{ m} \times 15 \text{ m}$ . Crates stacked 4 m high fill the entire space. What is the total volume?

- A)  $300 \text{ m}^3$
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4. Prism P is  $6 \times 8 \times 3$  cm and Prism Q is  $9 \times 4 \times 3$  cm. How do their volumes compare?

- A) P is larger by  $36 \text{ cm}^3$
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- C) They are equal
- D) P is larger by  $12 \text{ cm}^3$

### Part B: Fill in the Blank

Write the correct answer on each line.

1. A prism is  $4 \text{ cm} \times 5 \text{ cm} \times 3 \text{ cm}$ . If every dimension is doubled, the new volume is 480  $\text{cm}^3$ .
2. A freezer is  $5 \text{ ft} \times 3 \text{ ft} \times 2 \text{ ft}$ . Two identical freezers have a combined volume of 60  $\text{ft}^3$ .
3. A rectangular garden bed is 10 ft long and 4 ft wide. To hold  $120 \text{ ft}^3$  of soil, it must be 3 ft deep.
4. A cube has a volume of  $512 \text{ cm}^3$ . Each edge is 8 cm long.
5. A T-shaped solid has a bottom piece  $10 \times 4 \times 2$  cm and a top piece  $4 \times 4 \times 3$  cm. Its total volume is 128  $\text{cm}^3$ .