

Grade 7 - Area, Volume and Surface Area - Test Answer Key

Common Core 7.G.B.6 · maths-pdf.fr/en/

Use this answer key and scoring guide to grade the volume and surface area test. Each solution shows the full work, and the scoring note explains how the points are awarded. Give partial credit for correct steps even when the final answer is wrong.

Grade 7 · Common Core State Standards: **7.G.B.6**

Question 1 - Triangle [2 pts]

$$A = \frac{1}{2} \times 15 \times 8 = 60$$

60 square centimeters

Scoring: 1 point for the formula; 1 point for the answer.

Question 2 - Trapezoid [2 pts]

$$A = \frac{1}{2}(7+13)(6) = 60$$

60 square meters

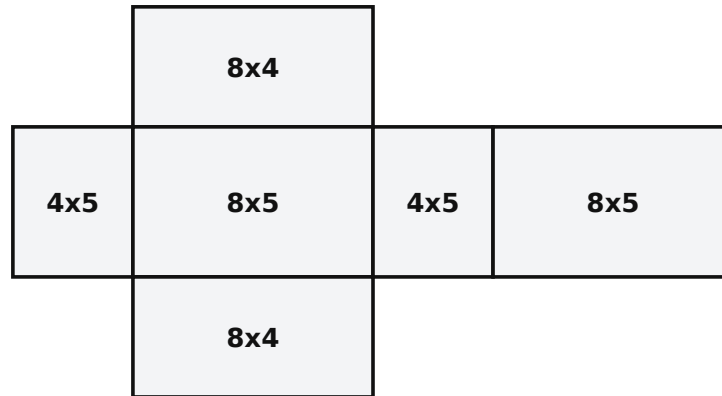
Scoring: 1 point for the formula; 1 point for the answer.

Question 3 - Prism volume and surface [2 pts]

$$V = 8 \times 5 \times 4 = 160.$$

$$SA = 2(40) + 2(32) + 2(20) = 80 + 64 + 40 = 184$$

160 cubic inches; 184 square inches



The net has six rectangles.

Scoring: 1 point for the volume; 1 point for the surface area.

Question 4 - Triangular prism [2 pts]

Base area: $\frac{1}{2} \times 6 \times 8 = 24$.

$$V = 24 \times 9 = 216$$

216 cubic inches

Scoring: 1 point for the base area; 1 point for the volume.

Question 5 - Composite figure [2 pts]

$$12 \times 9 = 108, 3 \times 4 = 12.$$

$$108 - 12 = 96$$

96 square feet

Scoring: 1 point for the two areas; 1 point for the difference.

Question 6 - Missing height [2 pts]

Height: $150 \div 30 = 5$ cm.

$$\text{Surface area: } 2(30) + 2(30) + 2(25) = 60 + 60 + 50 = 170$$

5 cm; 170 square centimeters

Scoring: 1 point for the height; 1 point for the surface area.

Question 7 - Pool water [2 pts]

$$25 \times 10 \times 3 = 750 \text{ cubic feet.}$$

$$\text{Full pool: } 25 \times 10 \times 4 = 1000. \quad 750 \div 1000 = 75\%$$

750 cubic feet; 75%

Scoring: 1 point for the volume of water; 1 point for the percent.

Question 8 - Net [3 pts]

- a. A rectangular prism that is 5 by 3 by 2.
- b. $2(15) + 2(10) + 2(6) = 30 + 20 + 12 = 62$ square units.
- c. $5 \times 3 \times 2 = 30$ cubic units.

Faces	Area
Two 5 x 3	30
Two 5 x 2	20
Two 3 x 2	12
Total	62

Surface area table.

Scoring: 1 point for each part.

Question 9 - Wedge of cheese [3 pts]

- a. $\frac{1}{2} \times 6 \times 4 = 12$ square inches.
- b. $12 \times 12 = 144$ cubic inches.
- c. $144 \times 0.05 = 7.20$ dollars.

Scoring: 1 point for each part.

Total

20 points