

Unit 1: Area and Surface Area

ADVANCED · SET 2

Name: _____

Date: _____

Show all your work. Write each answer as a single exact value with correct units where needed.

1. A parallelogram has a base of 14.5 cm and a corresponding height of 8 cm. A triangle has a base of 9 cm and the SAME area as the parallelogram. Find the height of the triangle, in cm.

Answer: _____

3. A rectangle measures 20 in by 15 in. A right triangle with legs 6 in and 8 in is cut out of one corner and removed. Find the area of the remaining region, in square inches.

Answer: _____

5. A cube has an edge length of 7 cm. Find its total surface area, in square centimeters.

Answer: _____

7. A triangular prism has two triangular faces, each a right triangle with legs 6 m and 8 m (hypotenuse 10 m). The prism is 15 m long. Find the total surface area, in square meters.

Answer: _____

9. A composite figure is made of a rectangle (18 cm by 10 cm) with a triangle attached to one 10 cm side. The triangle has a base of 10 cm and a height of 7 cm. From the whole figure a small rectangle of 4 cm by 3 cm is removed. Find the remaining area, in square centimeters.

Answer: _____

2. A trapezoid is split into a rectangle and a triangle. The rectangle is 12 m by 5 m. The triangle sits on top with a base of 12 m and a height of 4 m. Find the total area of the trapezoid, in square meters.

Answer: _____

4. A parallelogram has an area of $96 \frac{3}{4}$ square feet and a base of $12 \frac{3}{4}$ feet. Find its corresponding height, in feet.

Answer: _____

6. A rectangular prism has dimensions 9 cm by 4 cm by 6 cm. Find the total surface area of the prism (the area of its net), in square centimeters.

Answer: _____

8. A square pyramid has a base edge of 10 in and four triangular faces, each with a slant height of 13 in. Find the total surface area (base plus all four triangles), in square inches.

Answer: _____

10. A parallelogram has vertices at (1, 2), (7, 2), (9, 6), and (3, 6). Its base is the horizontal side and its height is the vertical distance between the two horizontal sides. Find its area, in square units.

Answer: _____

11. A regular hexagon is made of 6 identical triangles meeting at the center. Each triangle has a base of 8 mm and a height of 6.9 mm. Find the total area of the hexagon, in square millimeters.

Answer: _____