

# Unit 1: Area and Surface Area

## ADVANCED

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

Show your work and give each answer as an exact value with correct units where they apply.

1. A parallelogram has a base of 16.5 cm and a corresponding height of 12.4 cm. Find its area in square centimeters.

Answer: \_\_\_\_\_

3. A trapezoid has parallel sides of length 9.5 m and 14.5 m and a height of 6 m. Find its area in square meters.

Answer: \_\_\_\_\_

5. A cube has an edge length of 9.5 cm. Using its net, find the total surface area in square centimeters.

Answer: \_\_\_\_\_

7. A triangular prism has right-triangle bases with legs 9 cm and 12 cm and hypotenuse 15 cm, and the prism length is 20 cm. Using its net (2 triangles and 3 rectangles), find the total surface area in square centimeters.

Answer: \_\_\_\_\_

9. A triangle has an area of  $84 \text{ cm}^2$  and a height of 8 cm. Find the length, in centimeters, of the base that corresponds to that height.

Answer: \_\_\_\_\_

2. A triangle has a base of  $15/4$  in and a height of  $8/3$  in. Find its area in square inches, as an exact value.

Answer: \_\_\_\_\_

4. A rectangular sheet measures 24 cm by 18 cm. A smaller rectangle measuring 6 cm by 5 cm is cut out of it. What is the area, in square centimeters, of the remaining piece?

Answer: \_\_\_\_\_

6. A rectangular prism has dimensions 12 cm by 7 cm by 4 cm. Find its total surface area in square centimeters.

Answer: \_\_\_\_\_

8. A parallelogram has an area of  $153.6 \text{ cm}^2$  and a base of 12.8 cm. Find the height, in centimeters, that corresponds to that base.

Answer: \_\_\_\_\_

10. A square pyramid has a square base with side length 14 cm and triangular faces with slant height 9 cm. Using its net (1 square and 4 triangles), find the total surface area in square centimeters.

Answer: \_\_\_\_\_

11. A cube has a total surface area of  $294 \text{ cm}^2$ . Find the length, in centimeters, of one edge.

Answer: \_\_\_\_\_

12. Triangle P has an area of  $54 \text{ cm}^2$  and triangle Q has an area of  $90 \text{ cm}^2$ . Write the ratio of the area of P to the area of Q in simplest form.

Answer: \_\_\_\_\_