

Unit 1: Areas**ADVANCED · SET 2**

Name: _____

Date: _____

Show all work. Give each answer as an exact value (whole number, fraction, or decimal); include square units where relevant.

1. A parallelogram has a base of 14.5 cm and a corresponding height of 8 cm. A triangle has a base of 11 cm and a height of 9 cm. What is the combined area, in square centimeters, of the parallelogram and the triangle?

Answer: _____

3. A triangle has an area of 84 square inches. If its base is 24 inches, what is its height in inches?

Answer: _____

5. A rectangular sheet of paper is 15 cm by 12 cm. A parallelogram with base 6 cm and height 5 cm is cut out and removed. What area, in square centimeters, of paper remains?

Answer: _____

7. A rectangular prism (box) has dimensions 8 cm by 5 cm by 3 cm. What is its total surface area in square centimeters?

Answer: _____

9. A composite figure is made of a rectangle 20 cm by 9 cm with a triangle attached to one end. The triangle has a base of 9 cm (matching the rectangle's short side) and a height of 6 cm. What is the total area of the composite figure in square centimeters?

Answer: _____

2. A trapezoid has parallel sides of length 13 cm and 21 cm, and the perpendicular distance between them is 10 cm. Find its area in square centimeters. (Area = $(1/2)(b_1 + b_2) \times \text{height}$.)

Answer: _____

4. On a coordinate grid, a rectangle has vertices at (-3, -2), (5, -2), (5, 4), and (-3, 4). What is its area in square units?

Answer: _____

6. A cube has an edge length of 7 cm. What is its total surface area in square centimeters?

Answer: _____

8. A square pyramid has a base that is 10 m on each side. Each of the four triangular faces has a slant height of 13 m. What is the total surface area (base plus all four triangular faces) in square meters?

Answer: _____

10. A triangular prism has two triangular faces and three rectangular faces. Each triangular face is a right triangle with legs 6 cm and 8 cm (hypotenuse 10 cm). The prism is 15 cm long. What is the total surface area in square centimeters?

Answer: _____

11. A parallelogram-shaped tile has an area of 96 square cm. If its height is 6 cm, and these tiles are laid to cover a rectangular floor of area 3456 square cm with no gaps, how many whole tiles are needed?

Answer: _____

12. A rectangular prism has a square base with side length 4 cm and a height of 9 cm. What is the difference, in square centimeters, between its total surface area and its lateral surface area (the four side faces only)?

Answer: _____