Year 7 area of composite shapes worksheet

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Name: _____ Date: _____

Question 1

A compound shape is made by joining a rectangle and a square. The rectangle is 10 m long and 4 m wide. The square has a side length of 4 m and is attached to the right end of the rectangle, so the two shapes share one 4 m edge. Find the total perimeter and total area of the compound shape.

Answer: _____

Question 2

A parallelogram has a base of 9 m and a perpendicular height of 6 m. A triangle has a base of 8 m and a perpendicular height of 9 m. Find the total combined area of both shapes.

Answer: _____

Question 3

The floor of a room is an L shape. It is made from a rectangle 10 m long and 8 m wide, with a rectangle 4 m by 3 m cut out of one corner. Find the area of the floor.

Answer: _____

Question 4

A wall is 5 m wide and 2.4 m high. It has a window 1.2 m wide and 1 m high that will not be painted.

(a) Find the area of wall to be painted.

(b) One litre of paint covers 3.6 m^2. How many litres are needed for one coat?

Answer: _____

Question 5

A rectangular paddock is 20 m long and 14 m wide. Inside it is a triangular vegetable patch with a base of 8 m and a perpendicular height of 6 m. The rest of the paddock will be covered with turf, which costs $12 per square metre.

(a) Find the area to be covered with turf.

(b) Find the cost of the turf.

Answer: _____

Question 6

A block of land is a trapezium. Its two parallel sides are 30 m and 18 m long, and the perpendicular distance between them is 20 m. One of the non-parallel sides is at right angles to both parallel sides.

By splitting the block into a rectangle and a triangle, find the area of the block.

Answer: _____

Year 7 area of composite shapes: answers and worked solutions

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Question 1

Key idea: For a compound shape, split it into simpler shapes to find the area, and trace the outside edges carefully to find the perimeter.

1. Find the area of the rectangle: A_(rect) = 10 × 4 = 40 m² 2. Find the area of the square: A_(sq) = 4 × 4 = 16 m² 3. Add the areas: A_{total} = 40 + 16 = 56 m² 4. Trace the outside edges. The overall shape is a rectangle 14 m long and 4 m wide (the shared edge is internal, not on the boundary): P = 2 × (14 + 4) = 2 × 18 = 36 m

Answer: Total area = 56 m²; total perimeter = 36 m.

Question 2

Key idea: Use A = b × h for the parallelogram and A = ½ × b × h for the triangle, then add the two areas.

1. Area of the parallelogram: A_{para} = 9 × 6 = 54 m² 2. Area of the triangle: A_{tri} = ½ × 8 × 9 = ½ × 72 = 36 m² 3. Total area: A_{total} = 54 + 36 = 90 m²

Answer: The total combined area is 90 m².

Question 3

Answer: 68 m² (80 - 12)

Question 4

Answer: (a) 10.8 m² (12 - 1.2) (b) 3 L

Question 5

Answer: (a) 256 m² (280 - 24) (b) $3072

Question 6

Answer: 480 m² (rectangle 18 × 20 = 360, triangle ½ × 12 × 20 = 120)