Area, Perimeter & Volume: Hard Practice Paper 3 Answers

Q#	Answer	Explanation
1	C	The whole rectangle is 14 × 10 = 140 cm² and the piece cut out is 6 × 5 = 30 cm², so the area is 140 − 30 = 110 cm².
2	D	The three different faces are 8 × 3 = 24, 8 × 2 = 16 and 3 × 2 = 6 cm². There are two of each, so the surface area is 2 × (24 + 16 + 6) = 92 cm².
3	C	Volume is base area × height, so the base area is 480 ÷ 6 = 80 cm².
4	C	The length and width add to 32 ÷ 2 = 16 cm and multiply to 60. The pair 6 and 10 works, so the length is 10 cm.
5	B	Area is half the base times the height, so base × height = 2 × 45 = 90. Then the height is 90 ÷ 18 = 5 cm.
6	C	Each face is 96 ÷ 6 = 16 cm², so each edge is 4 cm because 4 × 4 = 16. The volume is 4 × 4 × 4 = 64 cm³.
7	D	The room area is 4.5 × 4 = 18 m², and 18 × £18 = £324.
8	B	The border adds 0.5 m to each side, so the outer rectangle is 6 m by 4 m, giving 24 m². Taking away the pond: 24 − 15 = 9 m².
9	D	The cubes fit 5 along, 4 across and 3 high, so 5 × 4 × 3 = 60 cubes.
10	D	Since 13 × 13 = 169, each side is 13 cm, so the perimeter is 4 × 13 = 52 cm.
11	C	The volume is 80 × 50 × 25 = 100,000 cm³, and 100,000 ÷ 1,000 = 100 litres.
12	D	Try a cube of edge 1 cm: its volume is 1 cm³. Doubling the edge to 2 cm gives 2 × 2 × 2 = 8 cm³, which is 8 times bigger.
13	C	Area of a triangle is half the base times the height: (30 × 14) ÷ 2 = 420 ÷ 2 = 210 cm².

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14	C	The length and width add to 30 cm. If the width is 6 cm then the length is 24 cm, and 6 + 24 = 30. So the area is 6 × 24 = 144 cm².
15	C	Multiply by 10,000: 3 × 10,000 = 30,000 cm².

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