Area, Perimeter & Volume: Hard Practice Paper 1 Answers

Q#	Answer	Explanation
1	C	The whole rectangle is 12 × 8 = 96 m² and the piece removed is 5 × 3 = 15 m², so the area is 96 − 15 = 81 m².
2	C	The three different faces are 5 × 4 = 20, 5 × 3 = 15 and 4 × 3 = 12 cm². There are two of each, so the surface area is 2 × (20 + 15 + 12) = 94 cm².
3	D	Volume is base area × height, so 36 × 7 = 252 cm³.
4	C	The length and width add to 44 ÷ 2 = 22 cm and multiply to 120. The pair 10 and 12 works, so the length is 12 cm.
5	C	Area is half the base times the height, so base × height = 2 × 54 = 108. Then the height is 108 ÷ 12 = 9 cm.
6	D	Since 5 × 5 × 5 = 125, each edge is 5 cm. A cube has 6 faces, each 5 × 5 = 25 cm², so the surface area is 6 × 25 = 150 cm².
7	C	The wall area is 6 × 2.5 = 15 m², and 15 × £4 = £60.
8	B	The path adds 1 m to each side, so the outer rectangle is 12 m by 8 m, giving 96 m². Taking away the lawn: 96 − 60 = 36 m².
9	C	The cubes fit 6 along, 4 across and 3 high, so 6 × 4 × 3 = 72 cubes.
10	C	The two cut edges replace exactly the pieces removed from the original sides, so the perimeter is unchanged: 2 × (10 + 6) = 32 cm.
11	C	The volume is 50 × 40 × 30 = 60,000 cm³, and 60,000 ÷ 1,000 = 60 litres.
12	C	The original area is 6 × 6 = 36 cm² and the new area is 12 × 12 = 144 cm². Since 144 ÷ 36 = 4, the area is 4 times bigger.
13	C	Area of a triangle is half the base times the height: (20 × 12) ÷ 2 = 240 ÷ 2 = 120 cm².

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14	C	The length and width add to 24 cm. If the width is 6 cm then the length is 18 cm, and 6 + 18 = 24. So the area is 6 × 18 = 108 cm².
15	D	Each face is 4 × 4 = 16 cm², and a cube has 6 faces, so the surface area is 6 × 16 = 96 cm².

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