Area, Perimeter & Volume: Hard Practice Paper 5 Answers

Q#	Answer	Explanation
1	C	The whole rectangle is 20 × 12 = 240 m² and the piece removed is 8 × 5 = 40 m², so the area is 240 − 40 = 200 m².
2	D	The three different faces are 7 × 6 = 42, 7 × 2 = 14 and 6 × 2 = 12 cm². There are two of each, so the surface area is 2 × (42 + 14 + 12) = 136 cm².
3	C	The base area is 12 × 6 = 72 cm², and the height is 720 ÷ 72 = 10 cm.
4	C	The length and width add to 42 ÷ 2 = 21 cm and multiply to 108. The pair 9 and 12 works, so the length is 12 cm.
5	C	Area is half the base times the height, so base × height = 2 × 120 = 240. Then the base is 240 ÷ 16 = 15 cm.
6	D	Since 8 × 8 × 8 = 512, each edge is 8 cm. Each face is 8 × 8 = 64 cm², so the surface area is 6 × 64 = 384 cm².
7	C	The floor area is 5 × 2.4 = 12 m², and 12 × £22 = £264.
8	C	The border adds 1.5 m to each side, so the outer rectangle is 13 m by 9 m, giving 117 m². Taking away the lawn: 117 − 60 = 57 m².
9	C	The cubes fit 5 along, 4 across and 2 high, so 5 × 4 × 2 = 40 cubes.
10	D	The width is 150 ÷ 15 = 10 cm, so the perimeter is 2 × (15 + 10) = 50 cm.
11	D	In centimetres the tank is 120 × 50 × 40 = 240,000 cm³, and 240,000 ÷ 1,000 = 240 litres.
12	B	Try a square of side 2 cm: its perimeter is 8 cm. Trebling the side to 6 cm gives a perimeter of 24 cm, which is 3 times bigger. The area, though, becomes 9 times bigger.
13	C	Area of a triangle is half the base times the height: (40 × 9) ÷ 2 = 360 ÷ 2 = 180 cm².

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14	C	The length and width add to 19 cm. If the width is 7 cm then the length is 12 cm, and 7 + 12 = 19. So the area is 7 × 12 = 84 cm².
15	B	Divide by 10,000: 50,000 ÷ 10,000 = 5 m².

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