Area, Perimeter & Volume: Medium Practice Paper 7 Answers

Q#	Answer	Explanation
1	C	Cut the shape into two rectangles. The bottom one is 8 squares by 3, giving 8 × 3 = 24 squares, and the tall part above it is 3 squares by 4, giving 3 × 4 = 12 squares. The total is 24 + 12 = 36 square centimetres.
2	C	The two sides meeting at the right angle are the base and the height. Multiply them and halve the result: 9 × 6 = 54, and then 54 ÷ 2 = 27 square centimetres.
3	A	The rectangle has an area of 8 × 6 = 48 square centimetres. Checking the others gives 36, 49, 48, 32 and 24 square centimetres, so only the 12 cm by 4 cm rectangle matches.
4	E	The three measurements must multiply to give 24 cubes. Four of them do, but 2 × 3 × 5 = 30, which is too many cubes, so that cuboid is impossible.
5	C	A cube has 6 faces and they are all the same size, so multiply one face by 6: 16 × 6 = 96 square centimetres.
6	B	Work out what 20 m² costs from each. Green Lawns charge 6 × 20 = 120 pounds, Turf Co charge £110, and Fresh Grass need two lots of 10 m², which is 58 × 2 = 116 pounds. Turf Co at £110 is the cheapest.
7	C	The area starts as 6 × 4 = 24 square centimetres. After doubling the length it becomes 12 × 4 = 48 square centimetres, which is twice as much. Doubling only one side doubles the area; doubling both would make it four times bigger.
8	B	Each square has a perimeter of 4 × 5 = 20 centimetres, so separately they come to 20 + 20 = 40 centimetres. Joined, the rectangle is 10 cm by 5 cm and its perimeter is 10 + 5 + 10 + 5 = 30 centimetres. The difference is 40 − 30 = 10 centimetres, which is the two edges now hidden inside.

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9	D	The volume of the cube is 10 × 10 × 10 = 1,000 cubic centimetres. Since each cubic centimetre holds 1 millilitre, the carton holds 1,000 ml, which is 1 litre.
10	C	The base runs along 8 squares and the top corner is 5 squares up, so the height is 5. Half the base times the height gives 8 × 5 = 40, and then 40 ÷ 2 = 20 square centimetres. The triangle leaning over does not change the rule.
11	B	The room has an area of 4 × 3 = 12 square metres. Sharing the cost over that area gives 96 ÷ 12 = 8, so the carpet costs £8 per square metre.
12	C	Work out each cuboid and add. The first is 5 × 4 × 2 = 40 cubic centimetres and the second is 3 × 4 × 2 = 24, so the solid is 40 + 24 = 64 cubic centimetres.
13	B	First find the area in square centimetres: 30 × 20 = 600. Then divide by 10,000 to change to square metres: 600 ÷ 10000 = 0.06 square metres.
14	B	Work in centimetres. Along the 200 cm side there are 200 ÷ 25 = 8 tiles, and along the 150 cm side there are 150 ÷ 25 = 6 tiles, so 8 × 6 = 48 tiles are needed. Four boxes give only 40 tiles, so 5 boxes must be bought.
15	C	The square has sides of 7 cm, because 7 × 7 = 49. Two of them side by side make a rectangle 14 cm by 7 cm, so the perimeter is 14 + 7 + 14 + 7 = 42 centimetres.

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