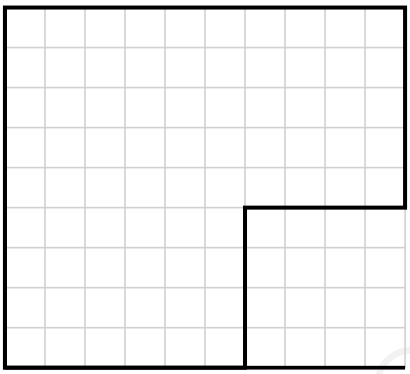
Area, Perimeter & Volume: Hard Practice Paper 8

Q1. Each square on this grid is 1 cm by 1 cm. What is the area of the shape?



A. 64 cm² *B.* 70 cm² *C.* 74 cm² *D.* 80 cm² *E.* 90 cm²

Q2. A cube of side 3 cm is glued centrally on top of a cube of side 6 cm. What is the total surface area of the solid?

A. 252 cm² *B.* 261 cm² *C.* 270 cm² *D.* 288 cm² *E.* 324 cm²

Q3. A rectangular lawn is 3 m longer than it is wide, and its perimeter is 46 m. What is its area?

A. 117 m² *B.* 130 m² *C.* 143 m² *D.* 156 m² *E.* 169 m²

Q4. The length of a rectangle is doubled and its width is halved. What happens to its area?

A. It stays the same

B. It doubles

C. It is halved

D. It is 4 times bigger

E. It is a quarter of the size

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Q5. Two identical right-angled triangles, each with a base of 8 cm and a height of 5 cm, are joined along their longest sides to make a rectangle. What is the perimeter of that rectangle?

A. 20 cm *B.* 22 cm *C.* 26 cm *D.* 30 cm *E.* 40 cm

Q6. A tank measures 80 cm by 50 cm by 60 cm and contains 120 litres of water. How deep is the water? (1 litre = 1,000 cm^3)

A. 20 cm *B.* 24 cm *C.* 30 cm *D.* 36 cm *E.* 40 cm

Q7. How many boxes measuring 10 cm by 10 cm by 5 cm fit inside a crate measuring 40 cm by 30 cm by 25 cm?

A. 45 *B.* 50 *C.* 60 *D.* 72 *E.* 80

Q8. A shape is made from a rectangle measuring 10 cm by 6 cm with a triangle on top of it. The triangle has a base of 10 cm and a height of 4 cm. What is the total area of the shape?

A. 80 cm^2 *B.* 84 cm^2 *C.* 90 cm^2 *D.* 100 cm^2 *E.* 120 cm^2

Q9. A room measures 6 m by 4.5 m. Carpet costs £21 per square metre and fitting costs a flat charge of £75. What is the total cost?

A. £567 *B.* £600 *C.* £642 *D.* £675 *E.* £702

Q10. A cube has a total surface area of 216 cm^2. What is its volume?

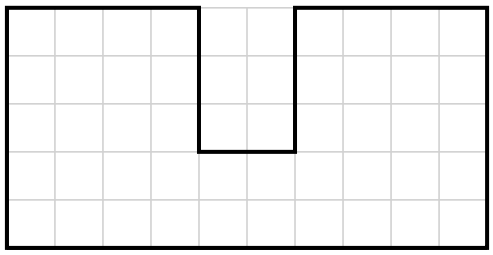
A. 108 cm^3 *B.* 144 cm^3 *C.* 180 cm^3 *D.* 216 cm^3 *E.* 288 cm^3

Q11. A car park measures 40 m by 25 m. 30% of it is marked out for staff. What area is that?

A. 250 m^2 *B.* 270 m^2 *C.* 300 m^2 *D.* 330 m^2 *E.* 700 m^2

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Q12. Each square on this grid is 1 cm by 1 cm. What is the perimeter of this U-shape?



A. 32 cm *B.* 34 cm *C.* 36 cm *D.* 40 cm *E.* 44 cm

Q13. A rectangle measures 1.2 m by 80 cm. What is its area in square centimetres?

A. 96 cm^2

B. 960 cm^2

C. 9,600 cm^2

D. 96,000 cm^2

E. 960,000 cm^2

Q14. Which of these boxes holds the least?

A. A cube with edges of 5 cm

B. 8 cm by 4 cm by 4 cm

C. 6 cm by 5 cm by 4 cm

D. 10 cm by 4 cm by 3 cm

E. 9 cm by 3 cm by 4 cm

Q15. A square lawn has an area of 144 m^2. A fence is put right around the outside at £12 per metre. What does the fence cost?

A. £432 *B.* £504 *C.* £576 *D.* £624 *E.* £1,728

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