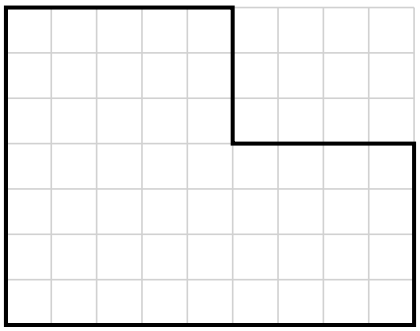
Area, Perimeter & Volume: Hard Practice Paper 6

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



A. 51 cm² *B.* 54 cm² *C.* 57 cm² *D.* 60 cm² *E.* 63 cm²

Q2. A cuboid has a square base with sides of 5 cm and a height of 8 cm. What is its total surface area?

A. 180 cm² *B.* 190 cm² *C.* 200 cm² *D.* 210 cm² *E.* 240 cm²

Q3. A photograph measures 15 cm by 10 cm. It is mounted in a frame that adds a border 3 cm wide all the way around it. What is the perimeter of the outside edge of the frame?

A. 66 cm *B.* 70 cm *C.* 74 cm *D.* 78 cm *E.* 82 cm

Q4. A rectangle has an area of 12 cm². Every side is then made 3 times longer. What is the area of the new rectangle?

A. 36 cm² *B.* 48 cm² *C.* 72 cm² *D.* 108 cm² *E.* 144 cm²

Q5. A rectangle measures 12 cm by 8 cm. A triangle with a base of 12 cm and a height of 8 cm is cut out of it. What area of the rectangle is left?

A. 24 cm² *B.* 36 cm² *C.* 48 cm² *D.* 60 cm² *E.* 72 cm²

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Q6. A tank measures 60 cm by 40 cm by 50 cm and is exactly half full of water. How many litres of water does it hold? (1 litre = 1,000 cm^3)

A. 40 litres

B. 50 litres

C. 60 litres

D. 96 litres

E. 120 litres

Q7. How many boxes measuring 6 cm by 4 cm by 3 cm fit inside a crate measuring 24 cm by 20 cm by 12 cm?

A. 60 *B.* 72 *C.* 80 *D.* 96 *E.* 120

Q8. A parallelogram has a base of 9 cm and a perpendicular height of 6 cm. A triangle has the same base and the same height. How many times bigger is the parallelogram's area?

A. Half as big

B. The same

C. 3 times bigger

D. 4 times bigger

E. 2 times bigger

Q9. A floor measures 5 m by 3.5 m. Carpet is sold only in whole square metres at £23 per square metre. What does it cost to carpet the floor?

A. £402 *B.* £405 *C.* £414 *D.* £420 *E.* £425

Q10. A cuboid has a volume of 360 cm^3. Its length is 12 cm and its width is 5 cm. What is its total surface area?

A. 162 cm^2 *B.* 264 cm^2 *C.* 300 cm^2 *D.* 324 cm^2 *E.* 372 cm^2

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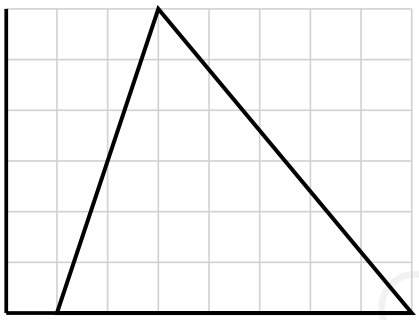
Q11. A rectangular lawn measures 20 m by 15 m. A quarter of it is dug up for a vegetable patch. What area is still lawn?

A. 75 m² *B.* 150 m² *C.* 200 m² *D.* 225 m² *E.* 240 m²

Q12. Each square on this grid is 1 cm by 1 cm. What is the area of this triangle?



A. 18 cm² *B.* 20 cm² *C.* 21 cm² *D.* 24 cm² *E.* 42 cm²

Q13. A field measures 250 m by 400 m. What is its area in hectares? (1 hectare = 10,000 m²)

A. 1 hectare

B. 10 hectares

C. 100 hectares

D. 1,000 hectares

E. 10,000 hectares

Q14. Which holds more, a cube with edges of 6 cm or a cuboid measuring 8 cm by 5 cm by 5 cm, and by how much?

A. The cube, by 16 cm³

B. The cube, by 26 cm³

C. The cuboid, by 16 cm³

D. The cuboid, by 24 cm³

E. They hold the same

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Q15. A rectangle has a length 4 cm greater than its width, and its area is 45 cm². What is its perimeter?

A. 24 cm *B.* 26 cm *C.* 28 cm *D.* 32 cm *E.* 36 cm

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