Exercise 20B

Length, EF = 9.5 m

Breadth, FG = 6 m
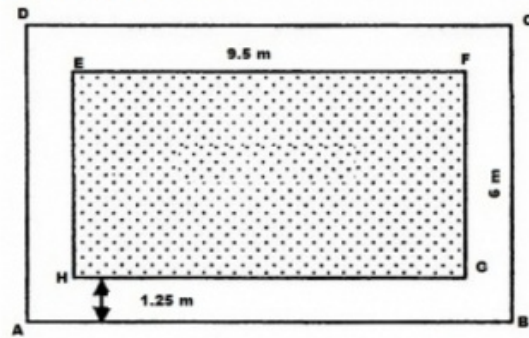
$\therefore$ Area of EFGH = 9.5 m $\times$ 6 m = 57 m^2

Length, AB = (9.5 + 1.25 + 1.25) m = 12 m

Breadth, BC = (6 + 1.25 + 1.25) m = 8.5 m

$\therefore$ Area of ABCD = 12 m $\times$ 8.5 m = 102 m^2

Area of the verandah = Area of ABCD – Area of EFGH

$\qquad\qquad\qquad$ = 102 m^2 – 57 m^2

$\qquad\qquad\qquad$ = 45 m^2

Rate of cementing the verandah = Rs 80 per m^2

$\therefore$ Total cost of cementing the verandah = Rs (80 $\times$ 45)

$\qquad\qquad\qquad\qquad\qquad$ = Rs 3600

Q6

Answer :

Side of the flower bed = 2 m 80 cm = 2.80 m   [since 100 cm = 1 m]
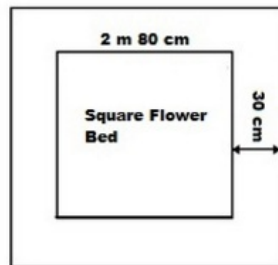
∴ Area of the square flower bed = (Side)^2 = (2.80 m)^2 = 7.84 m^2

Side of the flower bed with the digging strip = 2.80 m + 30 cm + 30 cm

$\qquad\qquad\qquad\qquad\qquad\qquad$ = (2.80 + 0.3 + 0.3) m = 3.4 m

Area of the enlarged flower bed with the digging strip = (Side)^2 = (3.4)^2 = 11.56 m^2

∴ Increase in the area of the flower bed = 11.56 m^2 – 7.84 m^2

$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad$ = 3.72 m^2

Q7

Answer :

Let the length and the breadth of the park be 2x m and x m, respectively.

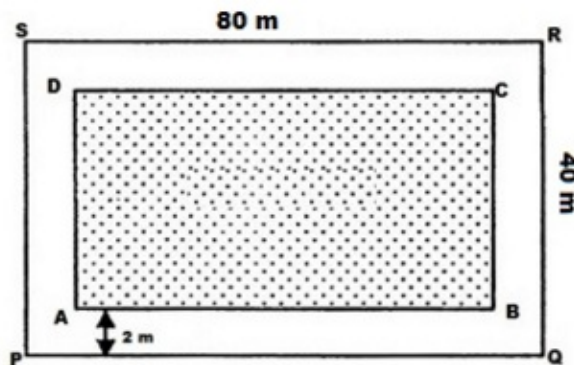Perimeter of the park = 2(2x + x) = 240 m

⇒ 2(2x + x) = 240

⇒ 6x = 240

⇒ x = $\left(\dfrac{240}{6}\right)$ m =40 m

∴ Length of the park = 2x = (2 × 40) = 80 m

Breadth = x = 40 m

Let PQRS be the given park and ABCD be the inside boundary of the path.

Length = 80 m

Breadth = 40 m

Area of the park = (80 × 40) m^2 = 3200 m^2

Width of the path = 2 m

∴ AB = (80 - 2 × 2) m = (80 - 4) m =76 m

AD = (40 - 2 × 2) m = (40 - 4) m = 36 m

Area of the rectangle ABCD = (76 × 36) m^2 = 2736 m^2

Area of the path = (Area of PQRS - Area of ABCD)

$\qquad\qquad\qquad$ = (3200 - 2736) m^2 = 464 m^2

Rate of paving the path = Rs. 80 per m^2

∴ Total cost of paving the path = Rs. (464 × 80) = Rs. 37,120

Q8

Answer :

Length of the hall, PQ = 22 m

Breadth of the hall, QR = 15.5 m
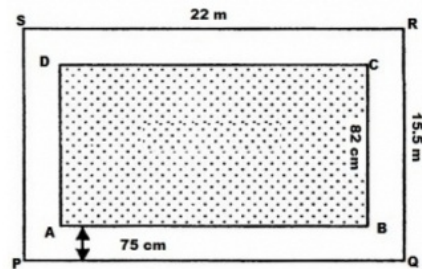
∴ Area of the school hall PQRS = 22 m × 15.5 m = 341 m²

Length of the carpet, AB = 22 m − (0.75 m + 0.75 m) = 20.5 m   [since 100 cm = 1 m]

Breadth of the carpet, BC = 15.5 m − (0.75 m + 0.75 m) = 14 m

∴ Area of the carpet ABCD = 20.5 m × 14 m = 287 m²

Area of the strip = Area of the school hall (PQRS) − Area of the carpet (ABCD)

= 341 m² − 287 m²

= 54 m²

Area of 1 m length of the carpet = 1 m × 0.82 m = 0.82 m²

∴ Length of the carpet whose area is 287 m² = 287 m² ÷ 0.82 m² = 350 m

Cost of the 350 m long carpet = Rs 60 × 350 = Rs 21000

Q9
Answer :

Let ABCD be the square lawn and PQRS be the outer boundary of the square path.

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