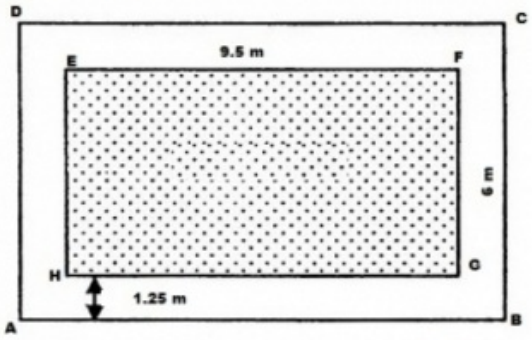
Exercise 20B

Length, EF = 9.5 m

Breadth, FG = 6 m



∴ Area of EFGH = 9.5 m × 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

∴ Area of ABCD = 12 m × 8.5 m = 102 m^2

Area of the verandah = Area of ABCD − Area of EFGH

= 102 m^2 − 57 m^2

= 45 m^2

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

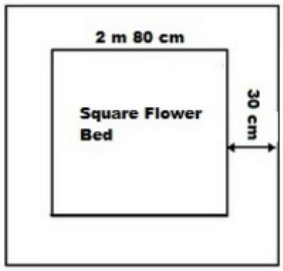
∴ Total cost of cementing the verandah = Rs (80 × 45)

= 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 = $(\text{Side})^2 = (2.80\text{ m})^2 = 7.84\text{ m}^2$

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

$= (2.80 + 0.3 + 0.3)\text{ m} = 3.4\text{ m}$

Area of the enlarged flower bed with the digging strip = $(\text{Side})^2 = (3.4)^2 = 11.56\text{ m}^2$

∴ Increase in the area of the flower bed = $11.56\text{ m}^2 - 7.84\text{ m}^2$

$= 3.72\text{ m}^2$

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

$\Rightarrow 2(2x + x) = 240$

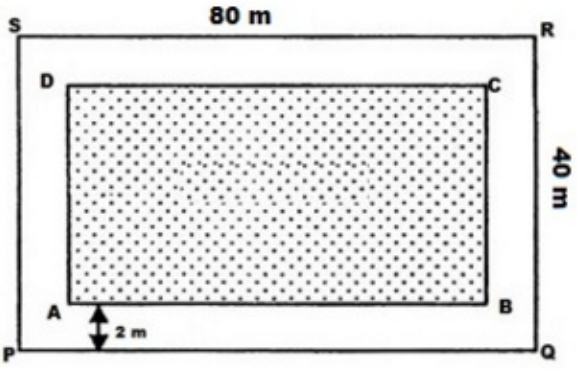
$\Rightarrow 6x = 240$

$\Rightarrow x = \left(\frac{240}{6}\right)\text{ m} = 40\text{ m}$

∴ Length of the park = $2x = (2 \times 40) = 80$ 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 = $(80 \times 40)\text{ m}^2 = 3200\text{ m}^2$

Width of the path = 2 m

∴ AB = $(80 - 2 \times 2)\text{ m} = (80 - 4)\text{ m} = 76$ m

AD = $(40 - 2 \times 2)\text{ m} = (40 - 4)\text{ m} = 36$ m

Area of the rectangle ABCD = $(76 \times 36)\text{ m}^2 = 2736\text{ m}^2$

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

$= (3200 - 2736)\text{ m}^2 = 464\text{ m}^2$

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

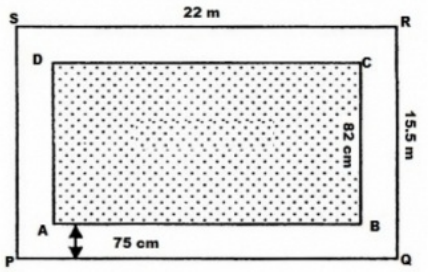
∴ Total cost of paving the path = Rs. (464×80) = Rs. 37,120

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 m^2

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 m^2

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

= 341 m^2 − 287 m^2

= 54 m^2

Area of 1 m length of the carpet = 1 m × 0.82 m = 0.82 m^2

∴ Length of the carpet whose area is 287 m^2 = 287 m^2 ÷ 0.82 m^2 = 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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