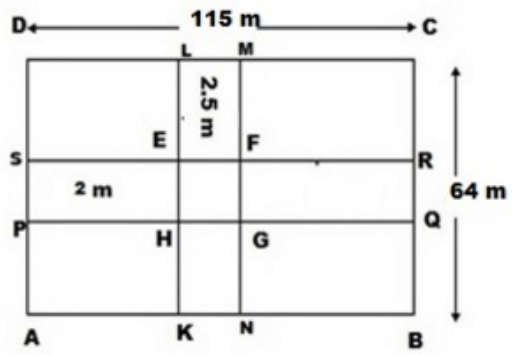
Exercise 20B



Length of the rectangular field, CD = 115 cm

Breadth of the rectangular field, BC = 64 m

∴ Area of the rectangular lawn ABCD = 115 m × 64 m = 7360 m^2

Area of the road PQRS = 115 m × 2 m = 230 m^2

Area of the road KLMN = 64 m × 2.5 m = 160 m^2

Clearly, the area of EFGH is common to both the two roads.

∴ Area of EFGH = 2 m × 2.5 m = 5 m^2

∴ Area of the roads = Area (KLMN) + Area (PQRS) − Area (EFGH)

= (230 m^2 + 160 m^2) − 5 m^2 = 385 m^2

Rate of gravelling the roads = Rs 60 per m^2

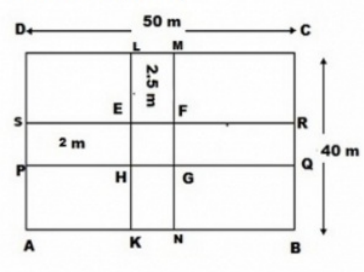
∴ Total cost of gravelling the roads = Rs (385 × 60)

= Rs 23,100

Q13

Answer :

Let ABCD be the rectangular field and KLMN and PQRS be the two rectangular roads with width 2.5 m and 2 m, respectively.



Length of the rectangular field CD = 50 cm
Breadth of the rectangular field BC = 40 m
∴ Area of the rectangular field ABCD = 50 m × 40 m = 2000 m^2
Area of road KLMN = 40 m × 2.5 m = 100 m^2
Area of road PQRS = 50 m × 2 m = 100 m^2

Clearly, area of EFGH is common to both the two roads.

∴ Area of EFGH = 2.5 m × 2 m = 5 m^2

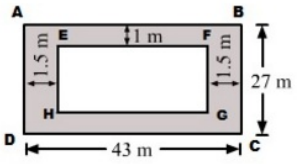
∴ Area of the roads = Area (KLMN) + Area (PQRS) − Area (EFGH)
= (100 m^2 + 100 m^2) − 5 m^2 = 195 m^2

Area of the remaining portion of the field = Area of the rectangular field (ABCD) − Area of the roads
= (2000 − 195) m^2
= 1805 m^2

Q14

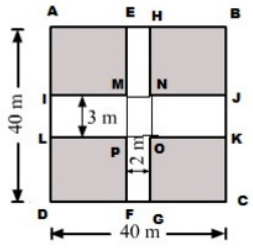
Answer :

(i) Complete the rectangle as shown below:



Area of the shaded region = [Area of rectangle ABCD - Area of rectangle EFGH] sq. units
= [(43 m × 27 m) - {(43 - 2 × 1.5) m x (27 - 1 × 2) m}]
= [(43 m × 27 m) - {40 m × 25 m}]
= 1161 m^2 - 1000 m^2
= 161 m^2

(ii) Complete the rectangle as shown below:



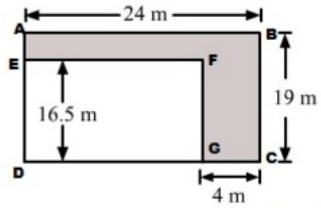
Area of the shaded region = [Area of square ABCD - {(Area of EFGH) + (Area of IJKL) - (Area of MNOP)}] sq. units

= [(40 × 40) - {(40 × 2) + (40 × 3) - (2 × 3)}] m^2
= [1600 - {(80 + 120 - 6)] m^2
= [1600 - 194] m^2
= 1406 m^2

Q15

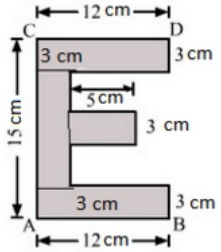
Answer :

(i) Complete the rectangle as shown below:



Area of the shaded region = [Area of rectangle ABCD - Area of rectangle EFGD] sq. units
= [(AB × BC) - (DG × GF)] m^2
= [(24 m × 19 m) - {(24 - 4) m × 16.5 m}]
= [(24 m × 19 m) - (20 m × 16.5) m]
= (456 - 330) m^2 = 126 m^2

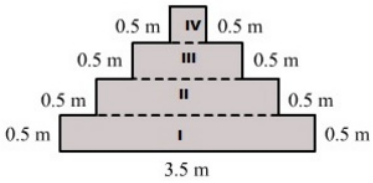
(ii) Complete the rectangle by drawing lines as shown below:



Area of the shaded region ={(12 × 3) + (12 × 3) + (5× 3) + {(15 - 3 - 3) ×3)} cm^2
= { 36 + 36 + 15 + 27} cm^2
= 114 cm^2

Q16

Divide the given figure in four parts shown below:



Given:
Width of each part = 0.5 m

Now, we have to find the length of each part.

Length of part I = 3.5 m
Length of part II = (3.5 - 0.5 - 0.5) m = 2.5 m
Length of part III = (2.5 - 0.5 - 0.5) = 1.5 m
Length of part IV = (1.5 - 0.5 - 0.5) = 0.5 m
∴ Area of the shaded region = [Area of part (I) + Area of part (II) + Area of part (III) + Area of part (IV)] sq. units
= [(3.5 × 0.5) + (2.5 × 0.5) + (1.5 × 0.5) + (0.5 × 0.5)] m^2
= [1.75 + 1.25 + 0.75 + 0.25] m^2
= 4 m^2

********** END **********