Question 20:

(i) Area of the square = $\frac{1}{2} \times (\text{diagonal})^2$ sq.unit

$= \left(\frac{1}{2} \times 24 \times 24\right) m^2 = 288\ m^2$

(ii) Side of the square = $\sqrt{288}$ m = 16.97 m
Perimeter of the square = (4 × side) units
= (4 × 16.97)m
= 67.88 m

Question 21:

Area of the square = $\frac{1}{2} \times (\text{diagonal})^2$ sq.unit

Let diagonal of square be x

$\frac{1}{2} \times (x^2) = 128 \Rightarrow x^2 = 256 \Rightarrow x = 16$ cm

Length of diagonal = 16 cm

Side of square = $\sqrt{128}$ cm = 11.31 cm

Perimeter of square = [4 × side] sq. units
=[4 × 11.31] cm = 45.24 cm

Question 22:
Let d meter be the length of diagonal

Area of square field = $\frac{1}{2}d^2 = 80000 m^2$ (given)

$\therefore \frac{1}{2}d^2 = 80000$ or $d^2 = 160000$

$\therefore d = 400 m$

Time taken to cross the field along the diagonal

$$= \frac{d}{speed} = \frac{400}{\frac{4000}{60}} minute$$

$$= \frac{400 \times 60}{4000} = 6 \text{ minute}$$

Hence, man will take 6 min to cross the field diagonally.

Question 23:

Rs. 180 is the cost of harvesting an area = 1 hectare = 10000 m^2

Re 1 is the cost of harvesting an area = $\frac{10000}{180} m^2$

Rs. 1620 is the cost of harvesting an area = $\frac{10000}{180} \times 1620$

Area = 90000 m^2

Area of square = $(side)^2 = 90000 m^2$

$side = \sqrt{90000} m = 300 m$

Perimeter of square = 4 × side = 4 × 300 = 1200 m

Cost of fencing = Rs 6.75 per meter.

Cost of fencing 1200 m long border = 1200 × Rs 6.75 = Rs. 8100

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