H.W

27-9-21

Example → 2

Soln :-

$2s = 50 + 80 + 120 = 250\text{m}$.

$s = 125$

$s - a = (125 - 120) = 5\text{m}$

$s - b = (125 - 80) = 45\text{m}$

$s - c = 125 - 50 = 75\text{m}$

Area of park $= \sqrt{s(s-a)(s-b)(s-c)}$

$= \sqrt{125 \times 5 \times 45 \times 75}$

$= 375\sqrt{15}\ \text{m}^2$

Perimeter of the park = AB + BC + CA = 250m.

Length of the wire needed for fencing =

$250 - 3 = 247$.

Cost of fencing $= 20 \times 247 = 4940$ rs.

Example - 3

Soln :-

Sides be $3x, 5x, 7x$.

$3x + 5x + 7x = 300$

$15x = 300$.

$x = 20$.

Sides are, 60, 100, 140.

$$s = \frac{60+100+120}{2} = 150 \text{ m}$$

$$\text{area} = \sqrt{150(150-60)(150-100)(150-140)}$$

$$= \sqrt{150 \times 90 \times 50 \times 10}$$

$$= 1500\sqrt{3} \text{ m}^2.$$

Exercise → 12.1

Q1) $$s = \frac{a+a+a}{2} = \frac{3a}{2}$$

Area of $\Delta = \sqrt{s(s-a)(s-b)(s-b)}$

$$= \sqrt{s(s-a)^3}$$

$$= \sqrt{\frac{3a}{2} \times \left(\frac{a}{2}\right)^3}$$

$$= \sqrt{\frac{3a^4}{2^4}} = \frac{\sqrt{3}}{4} a^2$$

Perimeter = 180 cm.

$3a = 180$, $a = 60$

$$\frac{\sqrt{3}}{4} \times 60 \times 60 = 900\sqrt{3} \text{ cm}^2.$$

Q2) Sides of Δ are,

$a = 122$ cm

$b = 12$ cm

$c = 22$ m,

$$s = \frac{a+b+c}{2}$$

$$\frac{122+120+22}{4} = \frac{264}{2} = 132 \text{ m}.$$

Area of Δ side wall.

$$= \sqrt{s(s-a)(s-b)(s-c)}$$

$$= \sqrt{132(132-122)(132-120)(132-22\text{m}^2)}$$

$$= \sqrt{12 \times 11 \times 10 \times 12 \times 11 \times 10 \text{m}^2} = 1320 \text{ m}2$$

Rent of 1 yr = ₹ 5000.

3 months = $5000 \times \frac{3}{12}$.

Rent of 3 months = $5000 \times \frac{3}{12} \times 1320 =$

16, 50, 000.