Example 2 $25 = 50 + 80m + 120 = 250m$

$ab = 125m$

$s - a = (125 - 120) = 5m$

$s - b = (125 - 80) = 45$

$s - c = (125 - 50) = 75$

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

$= \sqrt{125 \times 5 \times 45 \times 75}\ m^2$

$= \sqrt{25 \times 5 \times 5 \times 3 \times 3 \times 5 \times 25 \times 3}$

$= 25 \times 5 \times 3\sqrt{15}$

$= 375\sqrt{15}\ cm^2$

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

There Length of the wire needed of fencing $= 250m - 3m$

$= 247$

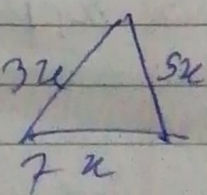
The cost of fencing $= 247 \times 20 = ₹4940$

Ex3 Let the side in mutare $= 3x, 5x$ & $7x$

Then we know that $= 3x + 5x + 7x = 300\ m$

$15x = 300$

$x = \frac{300}{15} = 20$



So the side of triangle

$3x = 3 \times 30 = 60m$

$5x = 5 \times 20 = 100$

$7x = 7 \times 20 = 140$

$S = \frac{60 + 100 + 140}{2} = \frac{300}{2} = 150$

Area of $\Delta = \sqrt{150(150-60)(150-100)(150-140)}$

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

$= 5 \times 3 \times 10\sqrt{3}$

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

Ex. 12.1

Q 4 We have perimeter of triangle = 42 cm

$a = 18$ cm

$b = 10$ cm

Therefore side c $42 - (18+10) = 14$

So $2s = 42$ cm

$s = 21$

$s - a = 21 - 18 = 3$

$s - b = 21 - 10 = 11$

$s - c = 21 - 14 = 7$

Area of Δ

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

$= \sqrt{21 \times 3 \times 11 \times 7}$

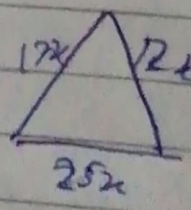
$= \sqrt{7 \times 3 \times 3 \times 11 \times 7}$

$= 7 \times 3\sqrt{11}$

$= 21\sqrt{11}\ cm^2$

5 Suppose sides in meter

$12x, 17x$ & $25x$



We know

$12x + 17x + 25 = 540$ cm

$54x = 540$

$x = \frac{540}{54} = 10$

Therefore $12x = 12 \times 10 = 120$

$17x = 17 \times 10 = 170$

$25x = 25 \times 10 = 250$ cm

We have $s = \frac{120 + 170 + 250}{2} = \frac{540}{2} = 270$

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

$= \sqrt{270(270-120)(270-170)(270-250)}$

$= \sqrt{270 \times 150 \times 100 \times 20}$

$= \sqrt{2 \times 15 \times 3 \times 3 \times 15 \times 10 \times 10 \times 10 \times 2 \times 10}$

$= 2 \times 15 \times 3 \times 10 \times 10$

$= 9000 \text{ cm}^2$