Example 2 -:

Sol, Given,

$2s = (50 + 8 + 120)m$

$= 250\,m.$

$s = \dfrac{\cancel{250}^{125}}{\cancel{2}^{1}}$

$= 125\,m.$

$\therefore (s-a) = (125-120)m$

$= 5m$

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

$= 45m$

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

$= 75m.$

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

$= \sqrt{125\,(5)\,(45)\,(75)}$

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

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

$= 250\,m.$

$\therefore$ Length of wire needed for the fence $= (250 - 3)m$

$= 247\,m.$

$\therefore$ & The cost of fencing $= ₹20 \times 247\,m$

$= ₹4940.$

4. Given,

First side = 18 cm

Second slide = 10 cm.

Sol,

Third side = 42 cm − (18+10) cm

$$= 42 \text{ cm} - 28 \text{ cm}$$

$$= 14 \text{ cm}.$$

$$s = 42/2$$

$$= 21$$

$$s - a = (21 - 18) \text{ cm}$$

$$= 3 \text{ cm}$$

$$s - b = (21 - 10) \text{ cm}$$

$$= 11 \text{ cm}$$

$$s - c = (21 - 14) \text{ cm}$$

$$= 7 \text{ cm}.$$

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

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

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

5 Given,

Sides of triangles = $12x, 17x$ and $25x$

Sol,

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

$54x = 540 cm$

$x = 540/54$

$= 10$

First side $= 12 \times 10$

$= 120 cm$

Second side $= 17 \times 10$

$= 170 cm$

Third side $= 25 \times 10$

$= 250 cm$

$s = 540/2$

$= 270 cm$

$(s-a) = (270 - 120)$

$= 150 cm$

$(s-b) = (270 - 170)$

$= 100 cm$

$(s-c) = (270 - 250) =$

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

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

$= \sqrt{81000000}$

$= 9000 cm^2$