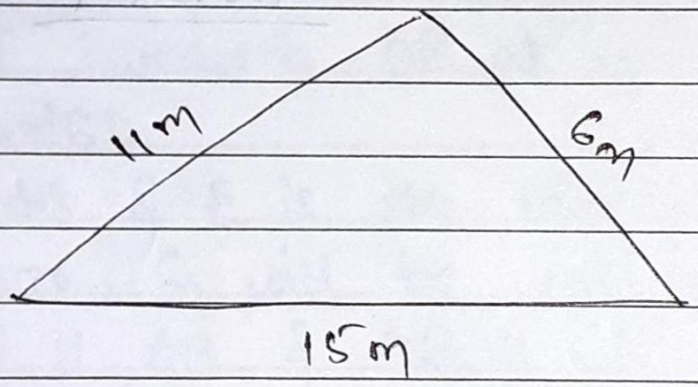
3. Ans.



$a = 11m$

$b = 6m$

$c = 15m$

$s \Rightarrow \frac{a+b+c}{2} \Rightarrow \frac{11+6+15}{2} \Rightarrow \frac{32}{2} = 16m$

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

$= \sqrt{16(16-11)(16-6)(16-15)}$

$= \sqrt{16(5)(10)(1)}$

$= \sqrt{2\times2\times2\times2\times5\times2\times5\times1}$

$= 2\times2\times5\times\sqrt{2}$

$= 20\sqrt{2}\ m^2$

4. Ans. $a = 18cm$
$b = 10cm$
$c = x cm$

Perimeter $= 42cm$
$\Rightarrow a+b+c = 42cm$
$\Rightarrow 18+10+x = 42$
$\Rightarrow 28+x = 42$
$\Rightarrow x = 42-28$
$x = \underline{14cm}$

$\therefore a = 18cm$
$b = 10cm$
$c = 14cm$

$s \Rightarrow \frac{a+b+c}{2} \Rightarrow \frac{18+10+14}{2} \Rightarrow \frac{42}{2} = \underline{21cm}$

$s-a = 21-18 = 3cm$
$s-b = 21-10 = 11cm$
$s-c = 21-14 = 7cm$

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

$= \sqrt{21(3)(11)(7)}$
$= \sqrt{3 \times 7 \times 3 \times 11 \times 7}$
$= 3 \times 7 \times \sqrt{11}$
$= \underline{21\sqrt{11}\ cm^2}$

Date
Page 6

5. Ans - Let $a = 12x$
$b = 17x$
$c = 25x$
Perimeter = 540 cm
$\Rightarrow a+b+c = 540$ cm
$\Rightarrow 12x + 17x + 25x = 540$
$\Rightarrow 54x = 540$
$x = \frac{540}{54}$ 10
$= 10$ cm

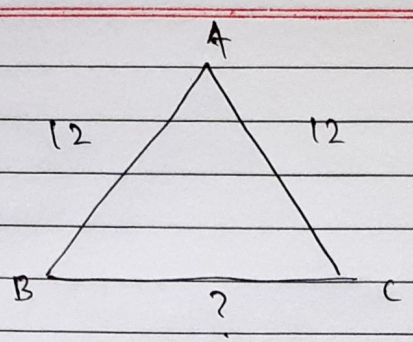
$\therefore a = 12 \times 10$
$= 120$ cm
$b = 17 \times 10$
$= 170$ cm
$c = 25 \times 10$
$= 250$ cm

$s \Rightarrow \frac{a+b+c}{2} \Rightarrow \frac{120+170+250}{2} \Rightarrow \frac{540}{2} \Rightarrow 270$ cm

$s-a = 270 - 120 = 150$
$s-b = 270 - 170 = 100$
$s-c = 270 - 250 = 20$

Area $= \sqrt{s(s-a)(s-b)(s-c)}$
$= \sqrt{270\,(150)(100)(20)}$
$= \sqrt{27 \times 10 \times 15 \times 10 \times 10 \times 2 \times 10}$
$= \sqrt{3 \times 3 \times 3 \times 2 \times 5 \times 3 \times 5 \times 2 \times 5 \times 2 \times 2 \times 5 \times 2 \times 5}$
$\Rightarrow 3 \times 3 \times 2 \times 5 \times 5 \times 2 \times 2 \times 5 = 9000\ cm^2$

6. Ans-



$a = 12$
$b = 12$
$c = x$
Perimeter $= 30\text{cm}$
$\Rightarrow 12 + 12 + x = 30\text{cm}$
$\Rightarrow 24 + x = 30\text{cm}$
$\Rightarrow x = 30 - 24$
$= \underline{6\text{cm}}$

$\therefore a = 12\text{cm}$
$b = 12\text{cm}$
$c = 6\text{cm}$

$s = \dfrac{a+b+c}{2} \Rightarrow \dfrac{12+12+6}{2} \Rightarrow \dfrac{30}{2} = \underline{15\text{cm}}$

$s - a = 15 - 12 = 3\text{cm}$
$s - b = 15 - 12 = 3\text{cm}$
$s - c = 15 - 6 = 9\text{cm}$

$\text{Area} = \sqrt{s(s-a)(s-b)(s-c)}$
$= \sqrt{15(3)(3)(9)}$
$= \sqrt{3 \times 5 \times 3 \times 3 \times 3 \times 3}$
$= 3 \times 3 \times \sqrt{15}$
$= \underline{9\sqrt{15}\ \text{cm}^2}$