

$$4.) a = 18, b = 10, c = ?$$

$$\begin{aligned}\therefore \Rightarrow 18 + 10 + c &= 42 \\ 28 + c &= 42 \\ c &= 42 - 28 \\ c &= 14\end{aligned}$$

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

$$= \frac{18+10+14}{2}$$

$$= \frac{42}{2}$$

$$= \underline{\underline{21 \text{ cm}}}$$

Area of the triangle

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

$$= \sqrt{21(21-18)(21-10)(21-14)}$$

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

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

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

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

5.) ~~area of~~

$$P = 540 \text{ cm}$$

$$\therefore S = \frac{540}{2}$$

$$S = \underline{\underline{270 \text{ cm}}}$$

$$\text{Ratio} = 12 : 17 : 25$$

$$\Rightarrow a = 12x, b = 17x, c = 25x$$

Now,

$$P = 540 \text{ cm}$$

$$\text{Total} \Rightarrow 12x + 17x + 25x = 540$$

$$54x = 540$$

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

$$x = 10$$

$$OC = 10$$

$$\text{So, } 12x = 12 \times 10 = 120 \text{ cm}$$

$$17x = 17 \times 10 = 170 \text{ cm}$$

$$25x = 25 \times 10 = 250 \text{ cm}$$

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Example

4.) $a = 200 \text{ m}$, $b = 240 \text{ m}$, $C = 360 \text{ m}$

$$S = \frac{200 + 240 + 360}{2}$$
$$= \underline{\underline{400 \text{ m}}}$$

So, area for growing wheat

$$= \sqrt{400(400-200)(400-240)(400-360)}$$

$$= \sqrt{400 \times 200 \times 160 \times 40}$$

$$= 16000\sqrt{2} \text{ m}^2 = 16 \times \sqrt{2} \text{ h}$$

$$= 2.26 \text{ h.}$$

So, area of $\triangle ACD$

$$= \sqrt{480(480-240)(480-320)(480-40)}$$

$$= \sqrt{480 \times 240 \times 160 \times 80}$$

$$= 38400 \text{ m}^2$$

$$= 3.84 \text{ h.}$$

Therefore area for growing potatoes

$$= \text{Area for growing onions}$$

$$= (3.84 \div 2) \text{ h} = 1.92 \text{ h.}$$

5. Since $AB = 9\text{ m}$ and $BC = 40\text{ m}$, $\angle B = 90^\circ$,

$$\begin{aligned}
 AC &= \sqrt{9^2 + 40^2} \\
 &= \sqrt{81 + 1600} \\
 &= \sqrt{1681}\text{ m} \\
 &= \underline{\underline{41\text{ m}}}
 \end{aligned}$$

Therefore, the first group has to clear the area of triangle ABC, which is ~~the~~ right angled

$$\begin{aligned}
 \text{Area of } \triangle ABC &= \frac{1}{2} \times B \times h \\
 &= \frac{1}{2} \times 40 \times 9 = 180\text{ m}^2
 \end{aligned}$$

The Second group

$$\text{Here } S = \frac{41 + 15 + 28}{2} \text{ m} = 42\text{ m}$$

Therefore area of $\triangle ACD$

$$= \sqrt{42(42-41)(42-15)(42-28)}$$