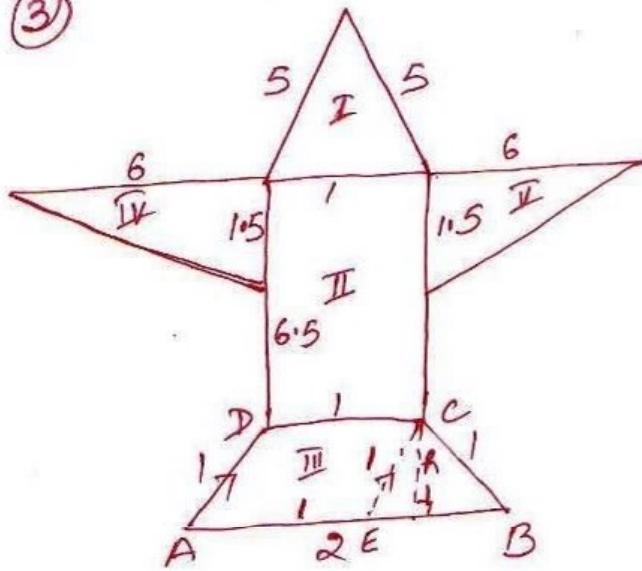


ex 12.2 herons formula ix

(3)



$$\begin{aligned} \text{area of rect II} &= bh \\ &= 6.5 \times 1 \\ &= 6.5 \text{ sq units} \end{aligned}$$

$$\begin{aligned} \text{ar}(\Delta \text{IV}) &= \frac{1}{2}bh \\ &= \frac{1}{2} \times 6 \times 1.5 \\ &= 4.5 \text{ sq units} \end{aligned}$$

$$\begin{aligned} \text{ar}(\Delta \text{V}) &= \frac{1}{2}bh \\ &= \frac{1}{2} \times 6 \times 1.5 \\ &= 4.5 \text{ sq units} \end{aligned}$$

const - draw  $CE \parallel DA$

Sol -  $\Delta I$

$$\begin{aligned} s &= \frac{a+b+c}{2} \\ &= \frac{1+5+5}{2} \\ &= \frac{11}{2} \text{ units} \end{aligned}$$

$$\begin{aligned} \text{area of } \Delta I &= \sqrt{s(s-a)(s-b)(s-c)} \\ &= \sqrt{\frac{11}{2} \left(\frac{11}{2} - 1\right) \left(\frac{11}{2} - 5\right) \left(\frac{11}{2} - 5\right)} \\ &= \sqrt{\frac{11}{2} \times \frac{11-2}{2} \times \frac{11-10}{2} \times \frac{11-10}{2}} \\ &= \sqrt{\frac{11}{2} \times \frac{9}{2} \times \frac{1}{2} \times \frac{1}{2}} \\ &= \frac{\sqrt{11 \times 3 \times 3}}{2 \times 2} \\ &= \frac{3}{4} \sqrt{11} \text{ sq units} \end{aligned}$$

trap III

$AECD$  is a  $\parallel\text{gm}$   $\left[ \begin{array}{l} DC \parallel AB \\ CE \parallel DA \end{array} \right]$

$$\begin{aligned} CE &= DA = 1 \\ AE &= DC = 1 \\ BE &= AB - AE \\ &= 2 - 1 \\ &= 1 \end{aligned}$$

$\therefore \Delta CEB$  is equilateral

$$h = \frac{\sqrt{3}}{2} \text{ Side}$$

$$\begin{aligned} &= \frac{\sqrt{3}}{2} \times 1 \\ &= \frac{\sqrt{3}}{2} \text{ unit} \end{aligned}$$

$$\begin{aligned} \text{area of trap} &= \frac{1}{2}(b_1 + b_2)h \\ &= \frac{1}{2}(1+2) \times \frac{\sqrt{3}}{2} \\ &= \frac{3\sqrt{3}}{4} \text{ sq units} \end{aligned}$$

$$\begin{aligned} \text{area of fig.} &= \frac{3\sqrt{11}}{4} + 6.5 + \frac{3\sqrt{3}}{4} + 4.5 \\ &= \frac{3\sqrt{11} + 3\sqrt{3} + 62}{4} \\ &= \frac{3 \times 3.31 + 3 \times 1.73 + 62}{4} \end{aligned}$$