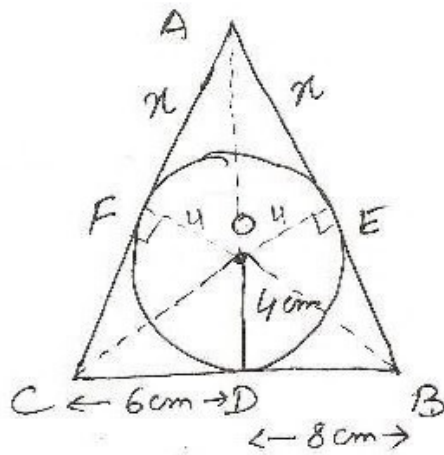


(2)



$CD = CF = 6 \text{ cm}$   
 $BE = BD = 8 \text{ cm}$   
 let  $AF = AE = x \text{ cm}$

tangents from same external point to the circle

$$\begin{aligned}
 \Delta ABC \\
 s &= \frac{a+b+c}{2} \\
 &= \frac{14+x+6+x+8}{2} \\
 &= \frac{28+2x}{2} \\
 &= (14+x) \text{ cm}
 \end{aligned}$$

$$\begin{aligned}
 \text{area} &= \sqrt{s(s-a)(s-b)(s-c)} \\
 &= \sqrt{(14+x)(14+x-14)(14+x-x-8)(14+x-x-6)} \\
 &= \sqrt{(14+x) \times x \times 6 \times 8} \\
 &= 4\sqrt{3x(x+14)} \text{ cm}^2
 \end{aligned}$$

$$\text{ar}(\Delta ABC) = \text{ar}(\Delta AOB) + \text{ar}(\Delta AOC) + \text{ar}(\Delta BOC)$$

$$\begin{aligned}
 4\sqrt{3(x+14)}x &= \frac{1}{2} \times AB \times OE + \frac{1}{2} \times AC \times OF + \frac{1}{2} \times BC \times OD \\
 &= \frac{1}{2} \times (8+x) \times 4^2 + \frac{1}{2} \times (6+x) \times 4^2 + \frac{1}{2} \times 14 \times 4^2 \\
 &= 2(8+x+6+x+14) \\
 &= 2(28+2x)
 \end{aligned}$$

$$\Rightarrow 4\sqrt{3(x+14)}x = 4(14+x)$$

Squaring both sides