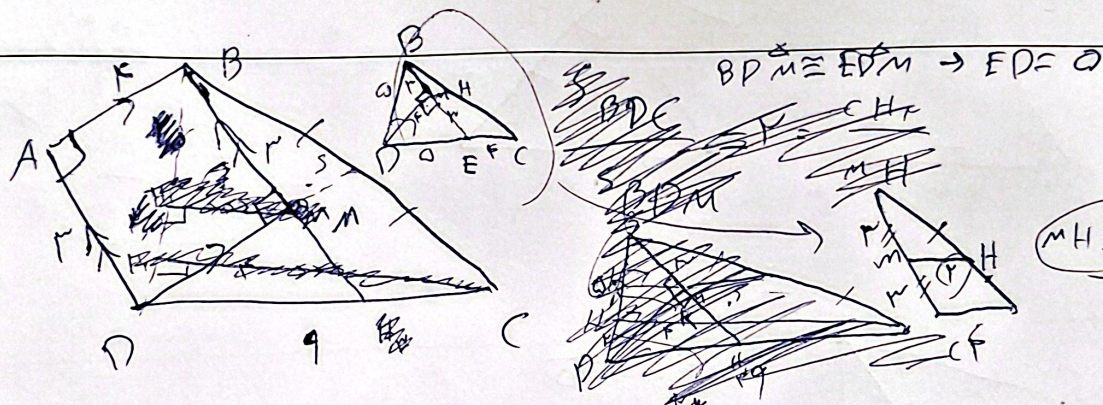


$$h_1 = h_2 \Rightarrow \frac{S_{BCE}}{S_{BDE}} = \frac{BC}{DE} = \frac{12}{5} \quad \checkmark$$

(۲)

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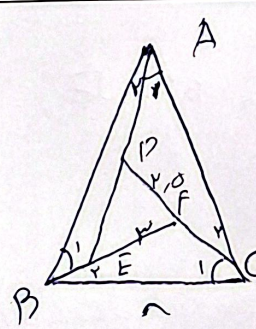


$$BP \cong ED \rightarrow ED = 0$$

$$MH = r \quad \checkmark$$

(۲)

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$$\begin{aligned} \hat{E} &= \hat{A}_1 + \hat{A}_r = \hat{A} \\ \hat{F} &= \hat{A}_1 + \hat{A}_r = \hat{A} \\ \hat{E} &= \hat{A} \\ \hat{F} &= \hat{A} \end{aligned} \Rightarrow \triangle DEF \sim \triangle CAB \Rightarrow \frac{DF}{BC} = \frac{EF}{AB} = \frac{1}{4}$$

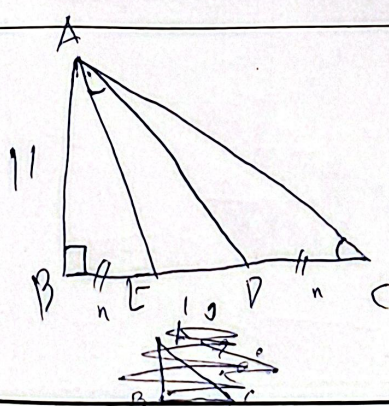
(۲)

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$$\begin{aligned} A = B \\ AMF = BCE \end{aligned} \Rightarrow \triangle AMF \sim \triangle BCE \Rightarrow FM = \frac{CM}{r} = \frac{\sqrt{50}}{r} = \frac{r\sqrt{50}}{r} = \sqrt{50}$$

(۲)

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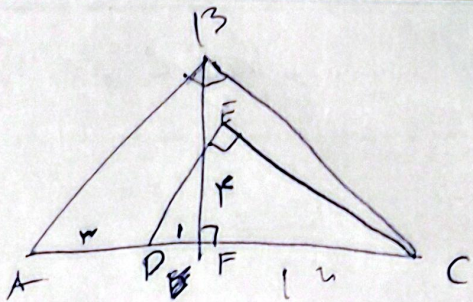


$$\triangle AED \sim \triangle EFA$$

$$\frac{AE}{CE} = \frac{ED}{EA} \Rightarrow \frac{\sqrt{121+n^2}}{10+n} = \frac{10}{\sqrt{121+n^2}} \Rightarrow n^2 - 10n + 11 = 0 \Rightarrow n = 1 \text{ or } n = 9$$

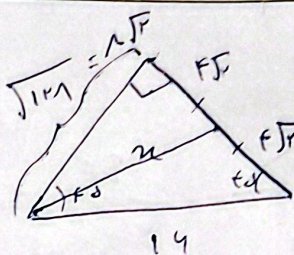
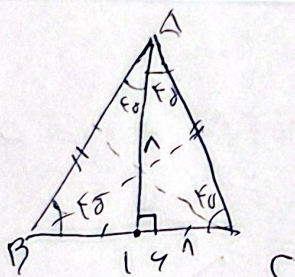
(۲)

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$$FC = EF = 14$$

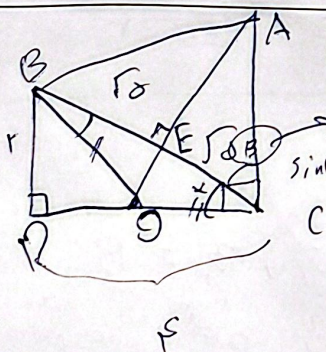
$$BC = \sqrt{r^2} = 1\sqrt{0} \checkmark$$



$$x = 10 + 14 = 24$$

$$x = 140$$

$$x = 4\sqrt{10} \checkmark$$



$$AE = r\sqrt{0}$$

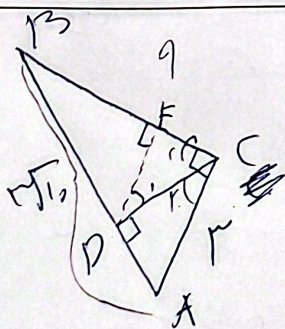
$$\tan(B) \times 14 = r$$

$$\frac{\pi}{2} - \alpha$$

$$\sin(\alpha) = \cos(\beta)$$

$$BC = \sqrt{r^2} = r\sqrt{0} \rightarrow BE = \sqrt{0}$$

$$\frac{r\sqrt{0} \times \sqrt{0}}{r} = \Delta \checkmark$$

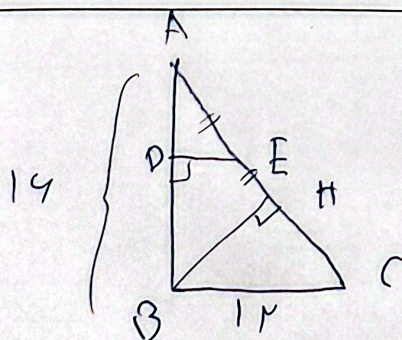


$$C_1 \neq C_2 \sim \left. \begin{array}{l} \therefore \triangle DEC \sim \triangle BCA \\ E = 90 \end{array} \right\}$$

$$\frac{EC}{r} = \frac{14}{r}$$

$$\frac{EC}{r} = \frac{14}{r} \rightarrow EC = 14$$

$$BE = 14 \checkmark$$



$$BH = \frac{14 \times 14}{\sqrt{14^2 + 14^2}}$$

$$\frac{BH}{AB} = \frac{HC}{BC}$$

$$\frac{14}{14} = \frac{HC}{14}$$

$$\frac{DE}{BC} = \frac{AE}{AC}$$

$$\frac{DE}{14} = \frac{AE}{\sqrt{14^2 + 14^2}}$$

$$\frac{PE}{14} = \frac{14 - \frac{14 \times 14}{14}}{14 \times 14} \rightarrow PE = \frac{14}{14} = 1 \checkmark$$