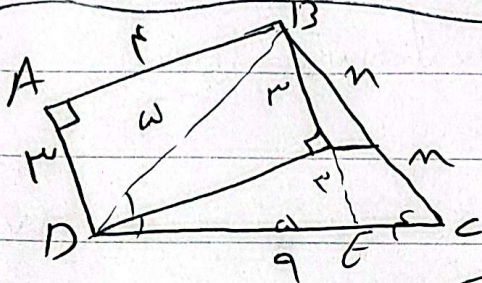


$BC \parallel DE$

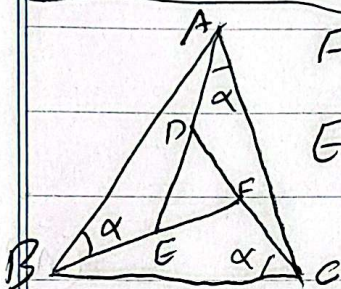
$$\frac{AD}{AB} = \frac{DE}{BC} \rightarrow \frac{1}{12} = \frac{DE}{AC} \quad (1)$$

$$\frac{S_{ACE}}{S_{BDE}} = \frac{\frac{1}{2} \times BC \times h}{\frac{1}{2} \times DE \times h} = \left(\frac{12}{9} \right)$$



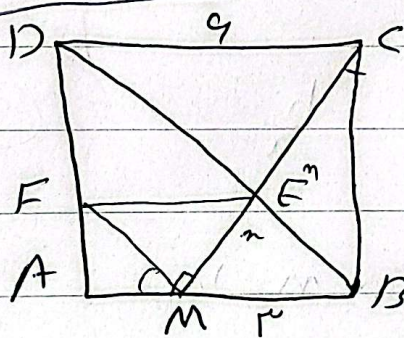
$DM \perp BE$ and $DM \perp AB$

$$\frac{MN}{E} = \frac{r}{9} = \frac{1}{3} \rightarrow MN = r$$



$$\left. \begin{array}{l} F = \alpha + \beta_1 = \beta \\ E = \alpha + A_1 = A \end{array} \right\} \triangle DEF \sim \triangle ABC \rightarrow \frac{DE}{AC} = \frac{DF}{BC} = \frac{EF}{AB}$$

$$\frac{r \cdot \alpha}{12} = \frac{r}{AB} \quad AB = 9, 9$$



$$BCM \sim AFM \rightarrow \frac{AF}{MB} = \frac{MF}{MC} = \frac{AM}{BC} \quad (2)$$

$$\frac{AF}{r} = \frac{r}{9}$$

$$AF = \frac{r^2}{9}$$

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$$MF = AF + AM \Rightarrow ME = \frac{r\sqrt{5}}{r}$$

$$\text{مسئله: } \frac{m}{r} = \frac{4-m}{9} \rightarrow 4m = 12 - 3m$$

$$m = 2$$

$$Mx = r$$

$$ME^2 = 1 + r^2 = 5 \rightarrow ME = \sqrt{5}$$

$$S_{FME} = \sqrt{5} \times \frac{r\sqrt{5}}{r} \times \frac{1}{2} = \frac{10}{2} = 5$$

$$\triangle AED \sim \triangle ACE \rightarrow \frac{ED}{AE} = \frac{AD}{AC} = \frac{AE}{EC}$$

$$AE^2 = (10+m)(10) = 100 + 10m$$

$$AB^2 + BE^2 = AE^2 \rightarrow 121 + m^2 = 100 + 10m$$

$$m^2 - 10m + 21 = 0 \rightarrow (m-7)(m-3)$$

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$$\left. \begin{array}{l} m = 3 \\ m = 7 \end{array} \right\}$$

