

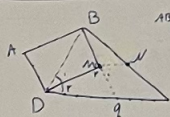
$$\frac{S_{BCE}}{S_{BDE}} = ? \quad S_{BCE} = \frac{1}{2} \times EH \times BC$$

$$\frac{S_{BDE}}{S_{BDE}} = \frac{1}{2} \times EH \times DE$$

$$\Rightarrow \frac{S_{BCE}}{S_{BDE}} = \frac{BC}{DE} \quad \frac{BC}{DE} = \frac{AB}{AD} = \frac{14}{7} = 2$$

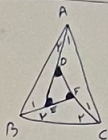
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محسن ملکن خوا
تکلیف سن و
یازم (A)

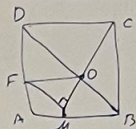


$$ABCO \begin{cases} BD = \sqrt{r^2 + r^2} = r\sqrt{2} \\ BM = AD = r \\ DM = AB = r \end{cases} \quad \begin{cases} D_1 = D_r \\ M_1 = M_r = 10, M_2 = 9 \rightarrow M_r = 9 \\ DM = DM \end{cases} \quad \begin{cases} \rightarrow BDM = 9DM \\ B_1 = 9 \\ DB = D_1 = 10 \\ BM = M_1 = 9 \end{cases}$$

$$DC = 9, D_1 = 10 \rightarrow 9C = 9 \quad \frac{MN}{r} = \frac{1}{r} \rightarrow MN = 1$$



$$\begin{cases} D = A + C \\ F = B + C_r \\ E = B + A_r \\ B_1 = A_1 = C_r \end{cases} \quad \begin{cases} D = C \\ F = B \\ E = A \end{cases} \quad \begin{cases} ABC \sim DEF \rightarrow \frac{r_{ABC}}{A} = \frac{r}{AB} \\ AB = \frac{r \cdot A}{r_{ABC}} = 9.4 \end{cases}$$

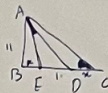


$$\triangle MCB \sim \triangle AFM \rightarrow \frac{AM}{CB} = \frac{FM}{MC} = \frac{FA}{MB} = \frac{1}{r}$$

$$\frac{FM}{MC} = \frac{r \cdot r}{r \cdot \sqrt{2}} = \frac{1}{r}$$

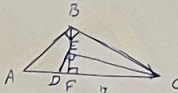
$$\triangle DCO \sim \triangle MOB \rightarrow \frac{MB}{DC} = \frac{OB}{OD} = \frac{OM}{OC} = \frac{1}{r} \rightarrow OM = r\sqrt{2}$$

$$S_{EMF} : \sqrt{2} \times \frac{r}{r} \sqrt{2} = \frac{1}{r} \rightarrow S_{EMF} = \frac{100}{r}$$



$$AE = \sqrt{r^2 + (11)^2} \quad \triangle CEA \sim \triangle FED \rightarrow \frac{AE \cdot AE}{CE \cdot DE} = 1$$

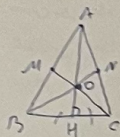
$$\begin{cases} r = r \\ r = r \end{cases} \quad \begin{cases} r^2 + (11)^2 = 1 \cdot (1 + r) \\ r^2 - 1 \cdot r + 11 = 0 \end{cases}$$



$$DF \cdot FC = (EF)^r \rightarrow FC = \frac{14}{r} = 14$$

$$AF \cdot FC = (BF)^r \rightarrow BF = \sqrt{1 \cdot 14} = 14$$

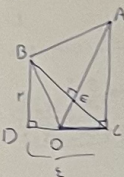
$$(BF)^r + (FC)^r = (BC)^r \rightarrow BC = \sqrt{14^2 + 14^2} = \sqrt{392}$$



$$BC = 17 \quad AH = 8 \Rightarrow A = 8, H = 9$$

$$r_2 = (17)^2 \rightarrow r_2 = \sqrt{17} = 1\sqrt{17} \sim AN = NC = 9\sqrt{17}$$

$$ANB: (MB)^2 = (9\sqrt{17})^2 + (1\sqrt{17})^2 = 81 + 1 = 82 \sim MB = \sqrt{82}$$



$$(BO)^2 + (CO)^2 = (BC)^2 \rightarrow BC = \sqrt{2 + 0} = \sqrt{2}$$

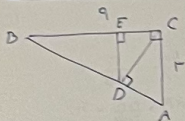
$$S_{ABE} = \frac{\sqrt{2} \cdot \sqrt{2}}{2}$$

$$BOE \cong OEC \rightarrow BE = EC = \sqrt{2}$$

$$S = \frac{2}{2} = 1, 0$$

$$(BA)^2 = BE^2 + BC^2 \sim \sqrt{1} \dots \Rightarrow BA = \sqrt{1}$$

$$(BA)^2 = (BE)^2 + (AE)^2 = 1 + (AE)^2 \sim AE = \sqrt{0}$$



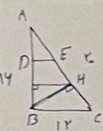
$$(BA)^2 = (BC)^2 + (AC)^2 \sim BA = \sqrt{9 + 11} = \sqrt{20}$$

$$DC = \frac{9 \cdot r}{\sqrt{11}} \sim DC = \frac{9 \cdot \sqrt{11}}{\sqrt{11}} = \frac{9}{\sqrt{11}}$$

$$(r)^2 = \left(\frac{9}{\sqrt{11}}\right)^2 + (DA)^2 \sim DA = \frac{r}{\sqrt{11}}$$

$$BD = BA - DA = \sqrt{20} - \frac{r}{\sqrt{11}}$$

$$(BD)^2 = BE^2 + BC^2 \sim BE = 11$$



$$AC = \sqrt{17^2 + 11^2} = r$$

$$BC = \sqrt{(HC)^2 + (BH)^2} \sim (BH)^2 = 18^2 - (HC)^2$$

$$(AB)^2 = 18^2 - (HC)^2 + (r - HC)^2 \sim 18^2 = 18^2 - \frac{(HC)^2}{2} + r^2 - 2 \cdot (HC) \cdot \frac{(HC)^2}{2}$$

$$AE = \frac{r - 17r}{r} = 8$$

$$\frac{AE}{AC} = \frac{ED}{CB} \sim DE = \frac{17 \cdot 8}{r} = \frac{136}{r}$$