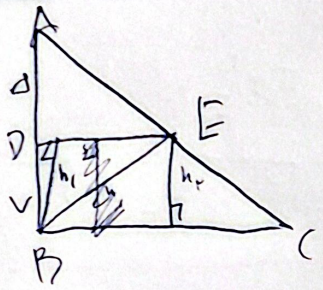
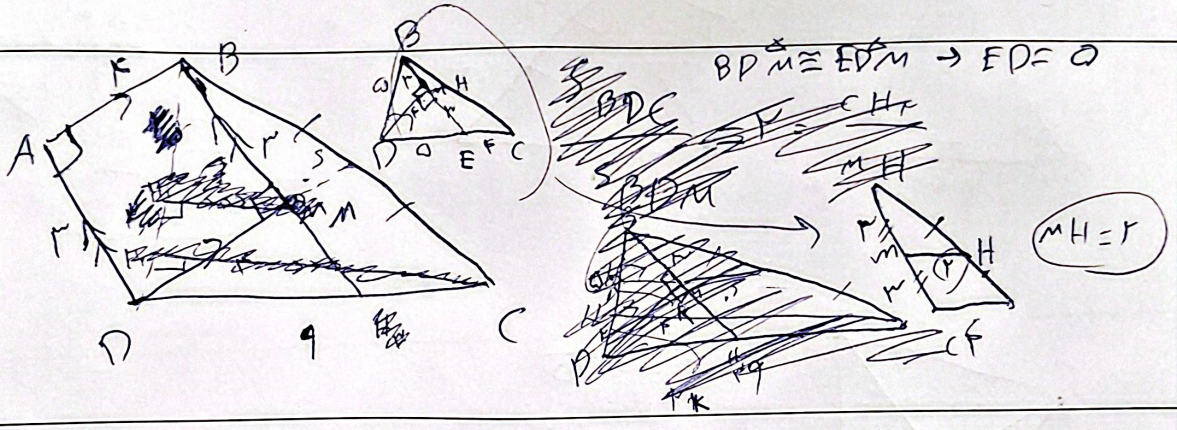
نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ۲۲ ..... کلاس یازدهم ریاضی A .....

۱



$h_1 = h_2 \rightarrow \frac{S_{BCE}}{S_{BDE}} = \frac{BC}{DE} = \frac{12}{5}$

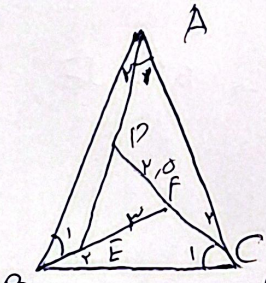
۲



$BD\hat{M} \cong ED\hat{M} \rightarrow ED = 5$

$MH = 2$

۳



$\hat{E} = \hat{A}_1 + \hat{A}_2 = \hat{A}$

$\hat{F} = \hat{B}_1 + \hat{B}_2 = \hat{B}$

$\hat{E} = \hat{A}$, $\hat{F} = \hat{B}$ $\Rightarrow DE\hat{F} \sim CA\hat{B} \Rightarrow \frac{DF}{BC} = \frac{EF}{AB} = 9,4$

۴

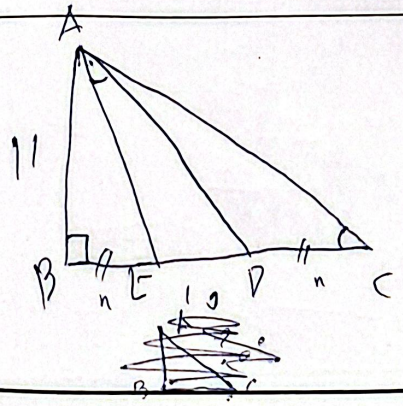
$A = B$, $AMF = BCE$ $\Rightarrow M\hat{A}F \sim C\hat{B}M$

$\rightarrow FM = \frac{CM}{3} = \frac{\sqrt{50}}{2} = \frac{3}{2}\sqrt{5}$

$M\hat{E}B \sim C\hat{E}D \Rightarrow ME = \frac{CE}{3} = \frac{CM}{3} = \frac{3}{5}\sqrt{5} = \sqrt{5}$

$\rightarrow \frac{15}{4}$

۵

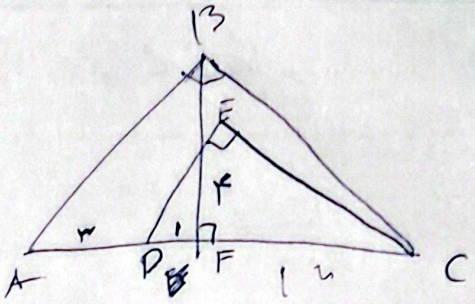


$A\hat{E}D \sim C\hat{E}A$

$\frac{AE}{CE} = \frac{ED}{EA} \Rightarrow \frac{\sqrt{121+n^2}}{10+n} = \frac{10}{\sqrt{121+n^2}}$

$\rightarrow n^2 - 10n + 21 = 0$

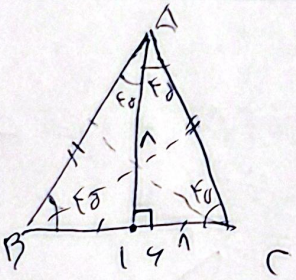
$n = 7$, $n = 3$

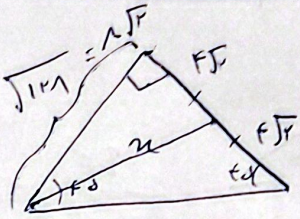


$FC = EF^{۲} = ۱۶$

$BC = \sqrt{۲۴۰} = ۸\sqrt{۵}$

۶



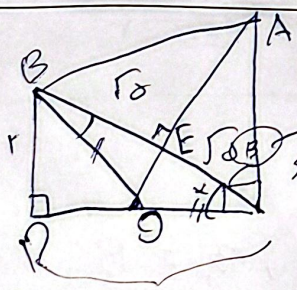


$x^{۲} = ۲۵۶ + ۲۵۶ - ۲ \times ۱۶ \times ۱۶ \times \frac{\sqrt{۲}}{۲}$

$x^{۲} = \frac{۱۲۸ + ۲۵۶}{۲} = ۱۶۰$

$\rightarrow x = ۴\sqrt{۱۰}$

۲



$AE = \frac{۲\sqrt{۵}}{\tan(\beta) \times \sqrt{۵}}$

$\frac{\pi}{۲} - \alpha$

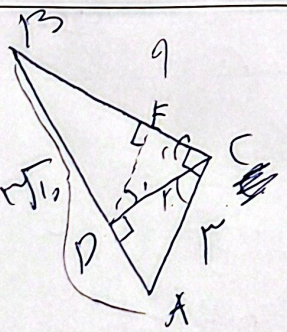
$\sin(\alpha) = \cos(\beta)$

$۲ + ۱۶ = ۲۰$

$BC = \sqrt{۴۰} = ۲\sqrt{۵} \rightarrow BE = \sqrt{۵}$

$\frac{۲\sqrt{۵} + \sqrt{۵}}{۲} = ۵$

۸



$C_1 \sim C_2$

$E = ۹۰$

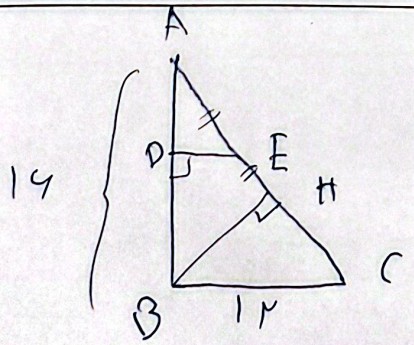
$\Rightarrow D\hat{E}C \sim B\hat{C}A$

$\rightarrow \frac{EC}{AC} = \frac{DE}{DC}$

$\rightarrow \frac{EC}{۲} = \frac{۹}{۲\sqrt{۱۰}} \rightarrow EC = \frac{۹}{\sqrt{۱۰}}$

$\Rightarrow BE = ۸,۱$

۹



$BH = \frac{۱۲ \times ۱۶}{\sqrt{۱۲^{۲} + ۱۶^{۲}}}$

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

$\frac{۱۲}{۱۶} = \frac{HC}{\sqrt{۱۲^{۲} + ۱۶^{۲}}}$

$HC = \sqrt{۱۲^{۲} + ۱۶^{۲}} - \frac{۱۲^{۲}}{\sqrt{۱۲^{۲} + ۱۶^{۲}}}$

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

$\frac{DE}{۱۲} = \frac{AE}{\sqrt{۱۲^{۲} + ۱۶^{۲}}}$

$\frac{DE}{۱۲} = \frac{۲۰ - \frac{۱۶ \times ۴}{۲۰}}{۲ \times ۲۰} \rightarrow DE = \frac{۷,۹۸}{۲} = ۳,۸۴$

۱۰