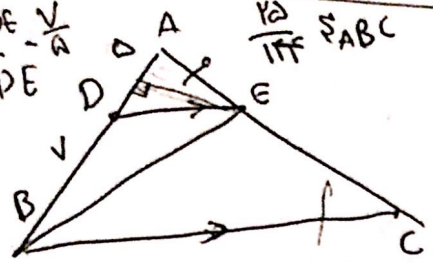
نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ..... کلاس .....

۱۹,۵

۱

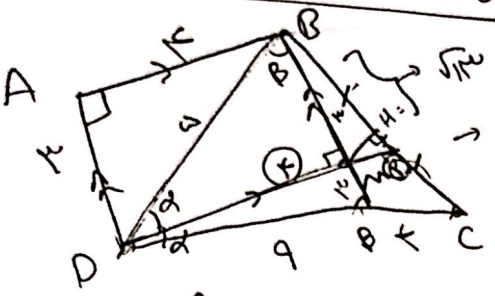


$\frac{S_{BDE}}{S_{ADE}} = \frac{V}{A}$ ، $\frac{۲۵}{۱۲۴} S_{ABC}$

$\frac{S_{BEC}}{S_{BDE}} = \frac{۷۹۸}{۷۹۸} = \frac{۸۴}{۲۵} = \frac{۱۲}{۵}$

$S_{BDE} + S_{BEC} \to \frac{۱۱۹}{۱۴۴} \frac{۳۳۱}{۱۴۴} S_{ABC}$

۲

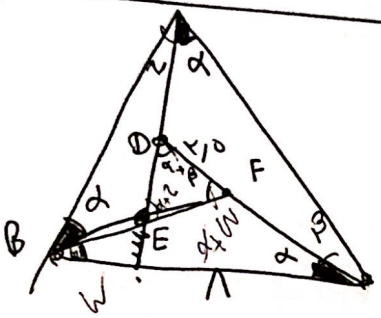


$۲۵ \times ۲ = \sqrt{۱۳} \times MH$

$MH = \frac{۹ \times \sqrt{۱۳}}{۱۳}$

۱۰/۵

۳

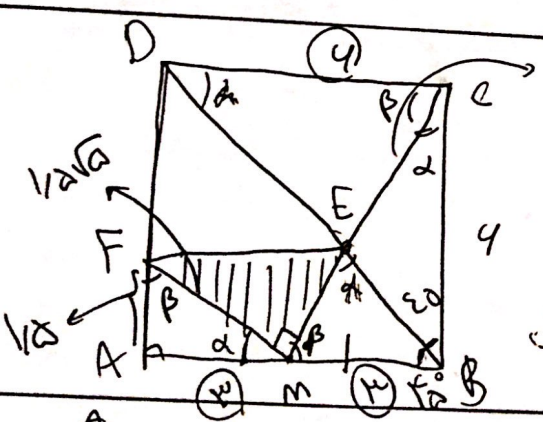


$AB = ?$

$\frac{DF}{BC} = \frac{EF}{AB} \Rightarrow \frac{۲۵}{۸} = \frac{۳}{m}$

۹/۶

۴



$۳۴+۹ \to ۳\sqrt{۱۳}$

$\frac{EM}{EC} = \frac{۱}{۲} \to ۲EM = EC$

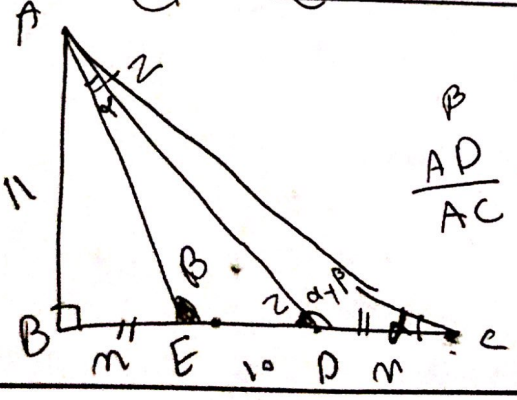
$\to EC = ۲m + m = ۳\sqrt{۵}$

$\hookrightarrow \frac{۱/۵\sqrt{۵} \times \sqrt{۵}}{۲} = ۵ \times \frac{۳}{۲} \times \frac{۱}{۲}$

$m = \sqrt{۵}$

۳/۷۵

۵



$\frac{AD}{AC} = \frac{۱۰}{AE} = \frac{AE}{۱۰+n} \to (AE)^۲ = ۱۰(۱۰+n)$

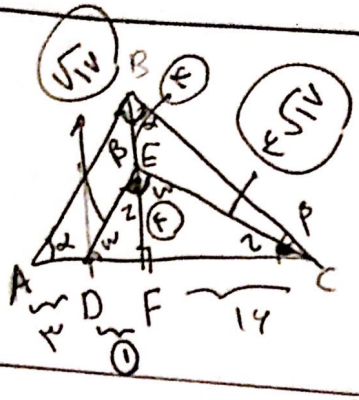
$\to AE = \sqrt{۱۰۰+۱۰n}$

$۱۰۰ + ۱۰n = ۱۲۱ + n^۲$

$n^۲ - ۱۰n + ۲۱$

$(n-۳)(n-۷) = ۰$

$n = ۳$ ، $n = ۷$



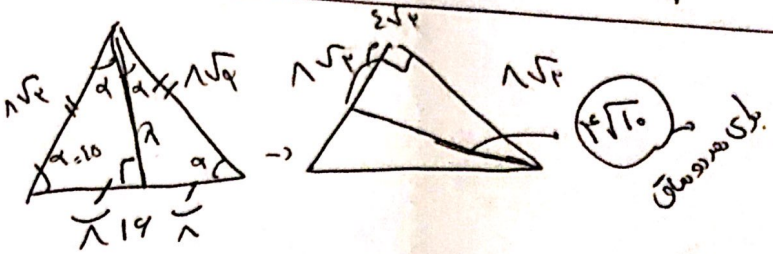
$BC = ?$

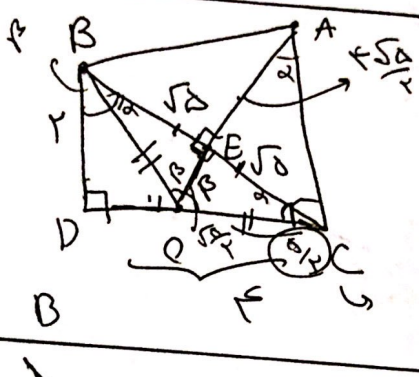
$\frac{BC}{BF} = \frac{AB}{4}$

$\frac{1}{4} = \frac{4}{FC}$

$\frac{BF}{14} = \frac{F}{BF}$

$BC = 8\sqrt{2}$





$BP = 2$

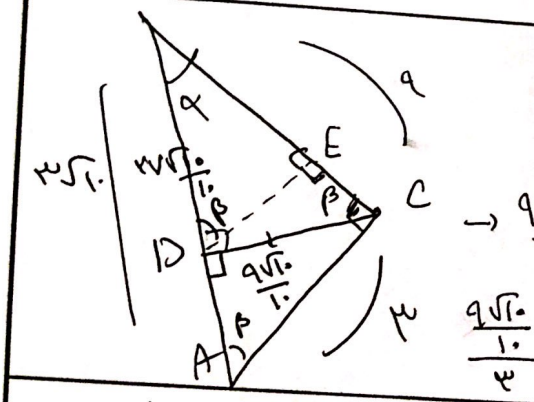
$CD = 4$

$S_{ABE} = ?$

$S_{ABE} = \frac{1}{2} \times \frac{4\sqrt{5}}{2} \times \sqrt{5}$

$\frac{\sqrt{5}}{4} = \frac{OE}{2}$

$\frac{AO}{2\sqrt{5}} = \frac{3}{2}$

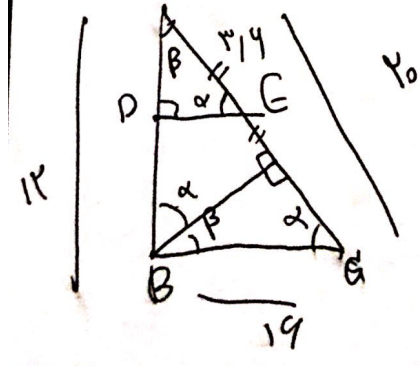


$BE = ?$

$\frac{9\sqrt{10}}{10} = \frac{BP}{3}$

$\frac{2\sqrt{10}}{10} = \frac{BE}{9}$

$BE = 8.1$



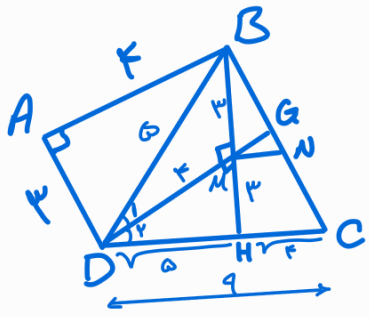
$DE = ?$

$\frac{20}{12} = \frac{16}{2\alpha}$

$\frac{20}{23.4} = \frac{14}{DE}$

$DE = 16.38$

(۲

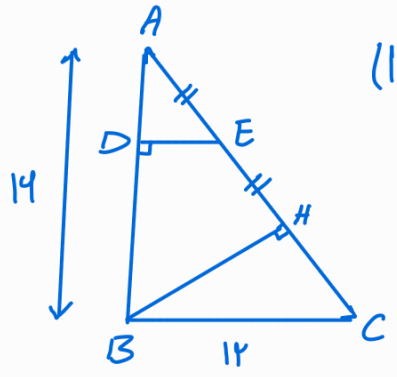


$\hat{D}_2 = \hat{D}_1 \leftarrow DMH$, BDM هم‌نهشت هستند

دو مثلث BMN , BHC با نسبت $\frac{1}{2}$ متشابه‌اند پس MN، HC است

بنابراین فاصله M از وسط ضلع BC برابر 2 است

(۱۱۰



$AB^2 + BC^2 = AC^2 \rightarrow AC = ۲۰$

$A\hat{D}E \sim ABH \rightarrow \begin{cases} \hat{A} = \hat{A} \\ \hat{D} = \hat{H} = ۹۰^\circ \end{cases} \rightarrow \frac{DE}{BH} = \frac{AE}{۱۴}$ (۱)

$S_{ABC} = \frac{AB \times BC}{۲} = \frac{BH \times AC}{۲} \rightarrow BH = ۹,۶$

$A\hat{B}C \rightarrow ۱۴^2 = AH \times ۲۰ \rightarrow AH = ۱۲,۸ \rightarrow AE = \frac{AH}{۲} = ۶,۴$

(۱) $\rightarrow \frac{DE}{BH} = \frac{AE}{۱۴} = \frac{DE}{۹,۶} = \frac{۶,۴}{۱۴} \rightarrow DE = ۴,۸۴$