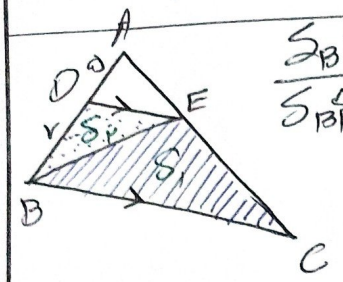
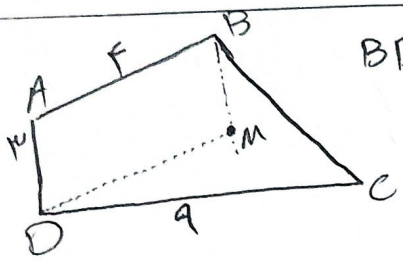
نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ..۲۲.. کلاس .....

۱



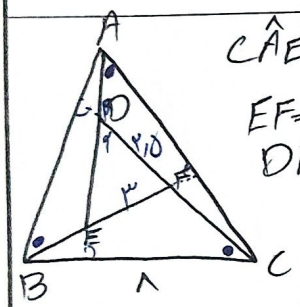
$\frac{S_{BCE}}{S_{BDE}} = ؟ \rightarrow \frac{S_1}{S_2} = \frac{\frac{1}{2}h \cdot 12x}{\frac{1}{2}x \cdot 5h} = \frac{12}{5} = 2,4$

۲



$B\hat{D}C = 2B\hat{D}M$

۳



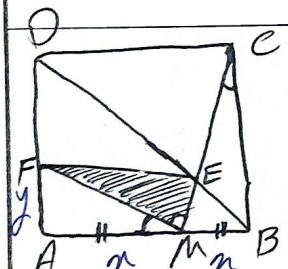
$C\hat{A}E = A\hat{B}F = B\hat{C}D$

$EF = ۳$

$DF = ۲,۵$

$AB = ؟$

۴



$AM = MB$

$B\hat{C}E = A\hat{M}F$

$CM = \sqrt{۳۶+۹} = \sqrt{۴۵}$

$MB = ۳$ ؟ شبه $DC = ۶$ ؟ $\rightarrow DCE \sim MEB \rightarrow \frac{ME}{MC} = \frac{1}{3} = \frac{x}{\sqrt{45}}$

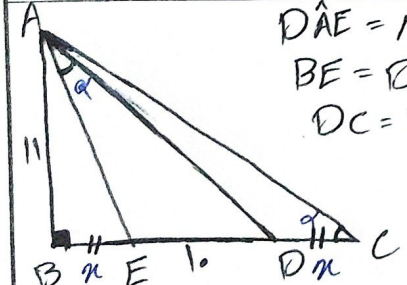
$\Longrightarrow x = \sqrt{۵} = ME$

$\begin{cases} y = \frac{۳}{۲} \\ x = ۳ \end{cases}$

$MF = \sqrt{۳^۲ + (\frac{۳}{۲})^۲} = \sqrt{۹ + \frac{۹}{۴}} = \sqrt{\frac{۴۵}{۴}}$

$\Longrightarrow$ محیط $= \sqrt{۵} \times \sqrt{\frac{۴۵}{۴}} = \sqrt{\frac{۴۵ \times ۵}{۴}} \simeq 7,05$

۵

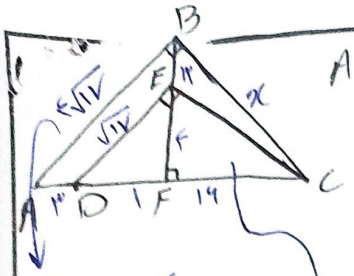


$D\hat{A}E = A\hat{C}D$

$BE = DC$

$DC = ؟$

۶



$A\hat{B}C = C\hat{E}D = 90$

$AD = 12$
$EF = 4$
$DF = 1$
$BC = ?$

$\frac{AB}{\sqrt{17}} = \frac{4}{1}$

$(\sqrt{17})^2 = 1 \times DC \longrightarrow DC = 17$

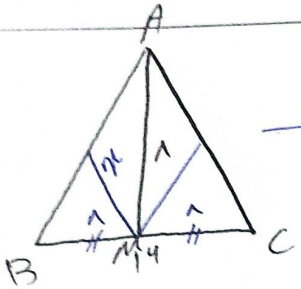
$\frac{EB+4}{4\sqrt{17}} = \frac{4}{\sqrt{17}} \longrightarrow EB = 12$

$\frac{12+4}{x} = \frac{4}{EC} \longrightarrow EC^2 = EF^2 + FC^2$

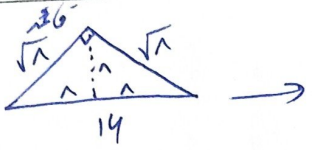
$EC = \sqrt{14^2 + 4^2} = 14,69$

$\Rightarrow x = 40,94$

۷



فرض



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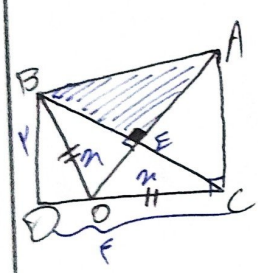
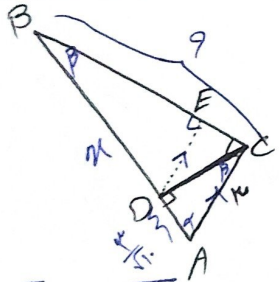


$BD = 2$
$CD = 4$
$A\hat{C}D = 90$
$\triangle A\hat{B}E = ?$

۹



$AC = 3$
$BC = 9$
$DE \perp BC \xrightarrow{\text{شیب}} DE \parallel AC \longrightarrow$ تشابه مثلث‌ها $\begin{cases} ADC \sim ABC & (I) \\ BDE \sim ABC & (II) \end{cases}$
$\hat{C} = 90$

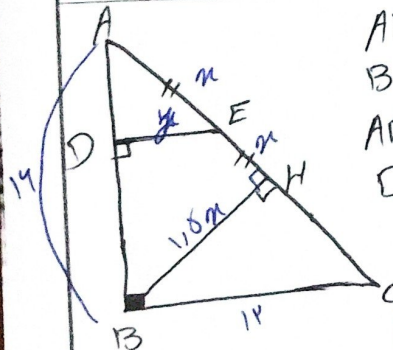
$\overline{AB} = \sqrt{81+9} = \sqrt{90}$

$(I) \longrightarrow \frac{\sqrt{90}}{3} = \frac{3}{AD} \longrightarrow \overline{AD} = \frac{9}{\sqrt{90}} = \sqrt{\frac{81}{90}} = \sqrt{\frac{9}{10}} = \frac{3}{\sqrt{10}}$

$(II) \longrightarrow \frac{3}{9} = \frac{DE}{BE} \Longrightarrow x = \sqrt{90} - \frac{3}{\sqrt{10}} \Longrightarrow \frac{\sqrt{90}}{3} = \frac{\sqrt{90} - \frac{3\sqrt{10}}{10}}{DE} \longrightarrow DE = 7,1$

$\longrightarrow BE = 9 - 7,1 = 1,9$

۱۰



$AB = 14$
$BC = 12$
$A\hat{B}C = 90$
$DE = ?$

$\Longrightarrow \frac{AD}{DE} = \frac{AB}{BC} = \frac{14}{12} = \frac{7}{6} = \frac{4}{3}$

$\frac{x}{y} = \frac{14}{3x} \longrightarrow 3x^2 = 14y \longrightarrow \frac{3\left(\frac{3x}{5}\right)^2}{14} = y = 0,12$

$ABH \sim BHC \longrightarrow \frac{14}{12} = \frac{3x}{BH} \longrightarrow \frac{42x}{14} = \frac{3x}{7}$

$\sqrt{\frac{9}{16}x^2 + 16x^2} = \frac{5}{4}x \longrightarrow 14 \longrightarrow x = 14 \times \frac{4}{5} = \frac{56}{5} = 9,6$