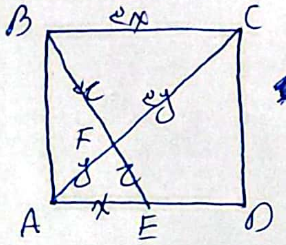
۲۰

نام و نام خانوادگی .نازنین کریمی........ پاسخنامه تشریحی تکلیف شماره ..۲۱.. کلاس .یازدهم دختر A.......

۱



$ED = 2AE$

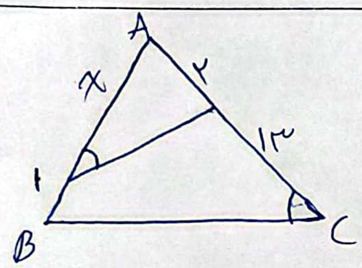
$BE \Rightarrow 9x^2 + x^2 = 10x^2 = \sqrt{10}\,x \div 4 = \boxed{\frac{1}{4} \times \sqrt{10}\,x} = EF$

$AC \Rightarrow 9x^2 + 9x^2 = 18x^2 = 3\sqrt{2}\,x \div 4 = \boxed{\frac{1}{4} \times 3\sqrt{2}\,x} = AF$

$\frac{EF}{AF} = \frac{\frac{1}{4} \times \sqrt{10}\,x}{\frac{1}{4} \times 3\sqrt{2}\,x} = \boxed{\frac{\sqrt{5}}{3}}$

۴

۲



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

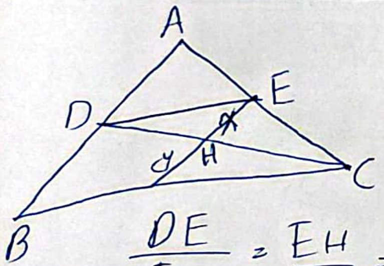
$\frac{x}{15} = \frac{2}{x+1} \Rightarrow x^2 + x - 30 = 0$

$x \to -6,\ 5$

$\boxed{x = 5}$

۴

۳



$\frac{AE}{AC} = \frac{DE}{AC} \Rightarrow \frac{x}{x + 1.2y} = \frac{DE}{3 + FC}$

$y \to x + 1.2(\frac{5}{3}x)$

$\frac{x}{3x} = \frac{DE}{3 + FC} \Rightarrow \boxed{3 + FC = 3DE}$

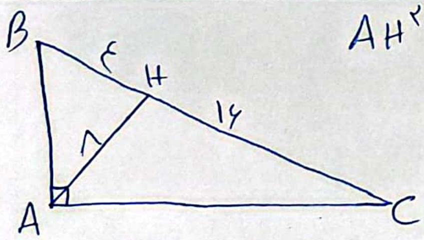
$\frac{DE}{FC} = \frac{EH}{HF} = \frac{3}{5} \Rightarrow \boxed{5DE = 3FC}$

$FC = 3.75$

$\boxed{BC = 6.75}$

۴

۴



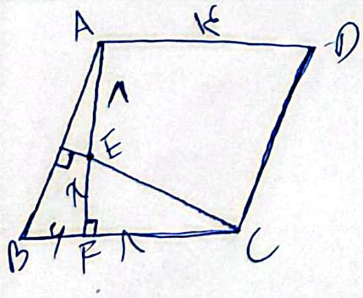
$AH^2 = BH \times CH = 64 \Rightarrow AH = 8$

$ABC \sim ABH$

$\frac{AC}{AB} = \frac{AH}{BH} = \frac{8}{4} = \boxed{2}$

۴

۵



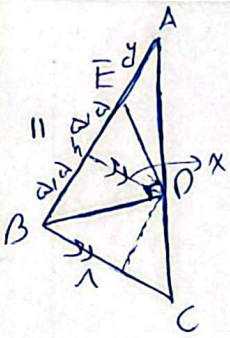
$\frac{BF}{EF} = \frac{AF}{CF} \Rightarrow \frac{6}{x} = \frac{8+x}{8} \Rightarrow x^2 + 8x - 48 = 0$

$x \to \boxed{4},\ -12$ ✗

$AF = 8 + 4 = \boxed{12}$

۴

۶



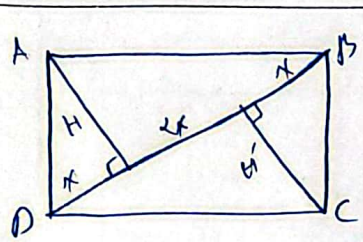
$x^2 = 3,3 \times 3,3 \to x = \frac{11}{2}$

$AE = y = \frac{22}{5} = 4,4$

$\frac{Ah}{AB} = \frac{Dh}{BC} \to \frac{y+3,3}{y+11} = \frac{\frac{11}{2}}{8} \Rightarrow 16y + 88 = 11y + 121 \Rightarrow$

☆ در مثلث قائم الزاویه ارتفاع وارد بر وتر میانه است.

۷



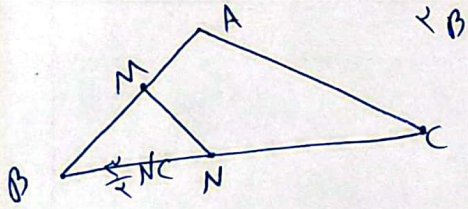
$H^2 = x \times 2x \Rightarrow H = \sqrt{2}\,x$

$H'^2 = x \times 2x \Rightarrow H' = \sqrt{2}\,x$

مساحت مستطیل $= \sqrt{2}\,x \times 4x \times 2 = \frac{8\sqrt{2}\,x^2}{2} = 4\sqrt{2}\,x^2$

$= \frac{\sqrt{2}\,x \times x}{2} = \frac{\sqrt{2}\,x^2}{2} \Rightarrow \frac{4\sqrt{2}\,x^2}{\frac{\sqrt{2}}{2}x^2} = 8$

۸



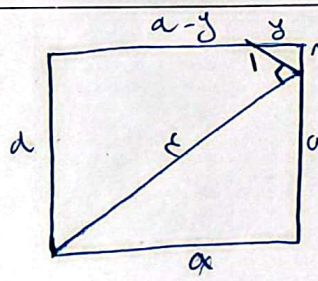
$2BN = 3NC \Rightarrow BN = \frac{3}{2}NC$

$S_{ABC} = 6 S_{BMN}$ $\quad \frac{S_{BMN}}{S_{ABC}} = \frac{1}{6} =$

$\frac{BM \times BN}{AB \times BC} \Rightarrow \frac{1}{6} = \frac{3}{5} \times \frac{BM}{AB}$

$\frac{BM}{AB} = \frac{3}{5} \Rightarrow \frac{BM}{AM} = \frac{3}{4} = 1,25$

۹



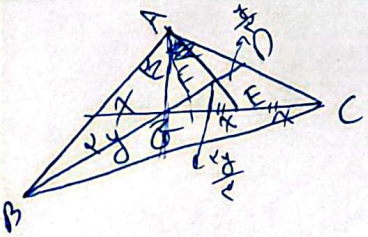
دو مثلث متشابه $\to \frac{y}{a-x} = \frac{x}{a} = \frac{1}{4} \to \begin{cases} a = 4x \\ a - x = 4y \end{cases}$

$4x - x = 4y \Rightarrow \frac{x}{y} = \frac{4}{3}$

$16 = a^2 + (a-x)^2 \Rightarrow x = \frac{4}{5}a \Rightarrow a = \frac{20}{5}$

مساحت مربع $= a^2 = \frac{20 \times 20}{5 \times 5} = \frac{256}{25} \times \frac{4}{4} = \frac{1024}{100} = 10,24$

۱۰



$\frac{BD}{FD} = \frac{2y+y}{\frac{y}{2}} = \frac{3y}{\frac{y}{2}} = 9$