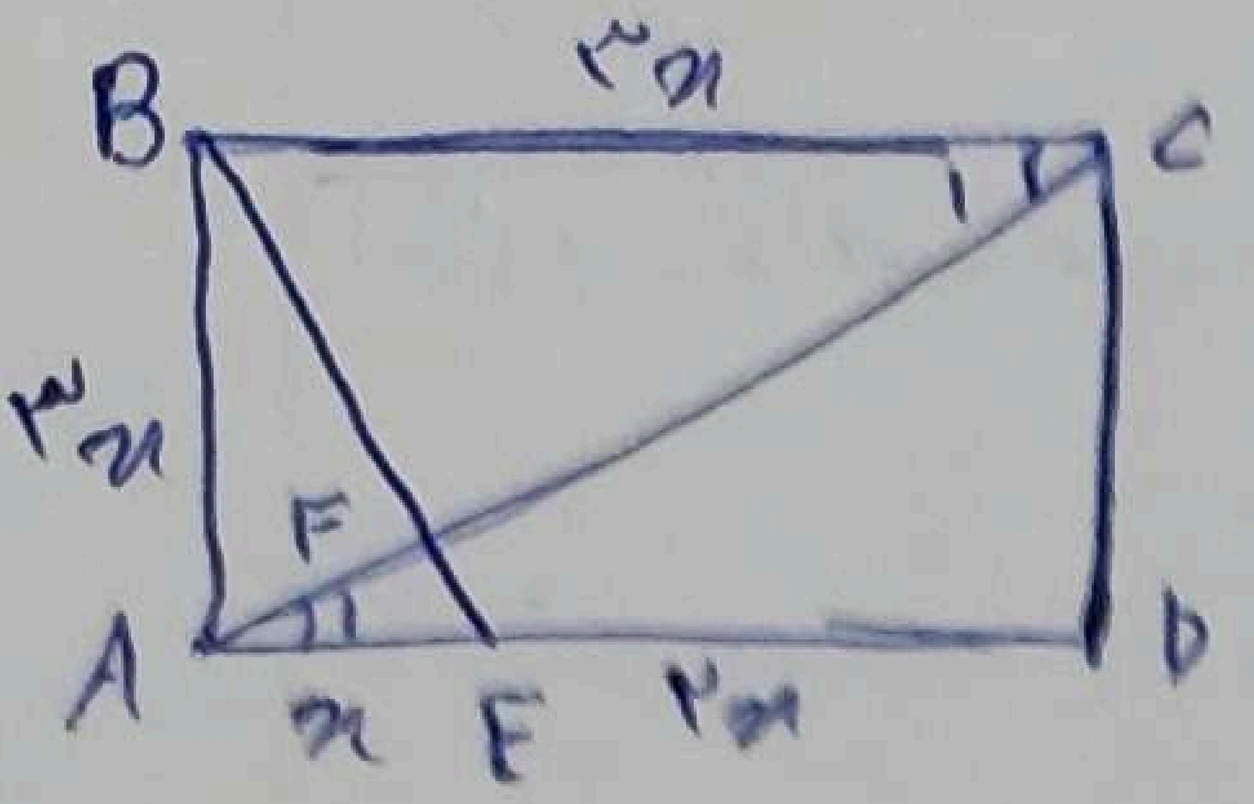
۱۹٫۷۵ آفرین!

نام و نام خانوادگی ...امیرعلی مقصودی... پاسخنامه تشریحی تکلیف شماره ...۲۱... کلاس ...یازدهم تجربی A...

۱ (۲)



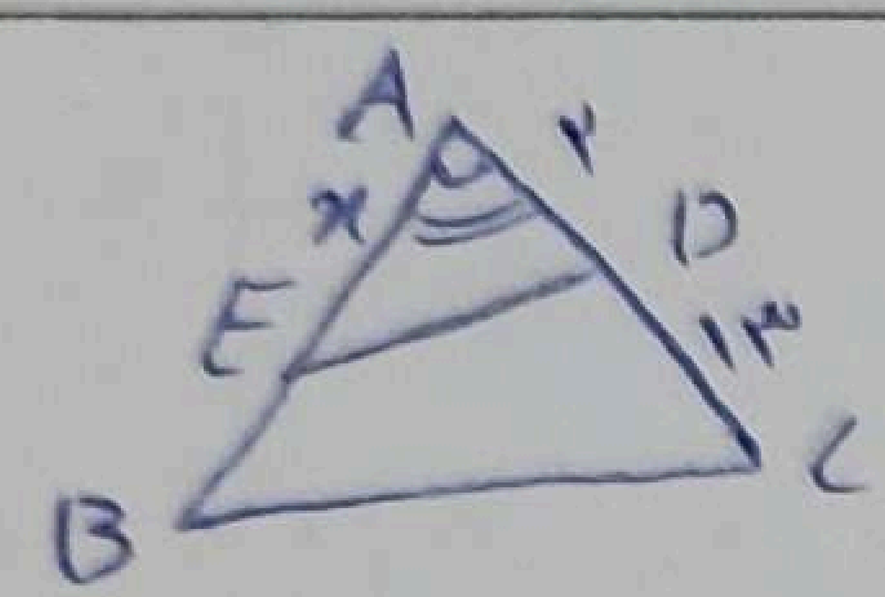
$\overline{BC} \parallel \overline{AD} \Rightarrow \hat{A}_1 = \hat{C}_1$ ، $\hat{A}\hat{C}$ مورب ، $F_2 = F_1$ } زز $\overset{\triangle}{BCF} \approx \overset{\triangle}{EAF}$

$\frac{BC}{AE} = \frac{3x}{x} = 3 \to k$

$\overline{BE} = \sqrt{(3x)^2 + x^2} = \sqrt{10}x$ ، $\overline{EF} \in \overline{BC}$ ، $\frac{1}{4}\overline{BC} = \overline{EF} \to EF = \frac{\sqrt{10}x}{4}$

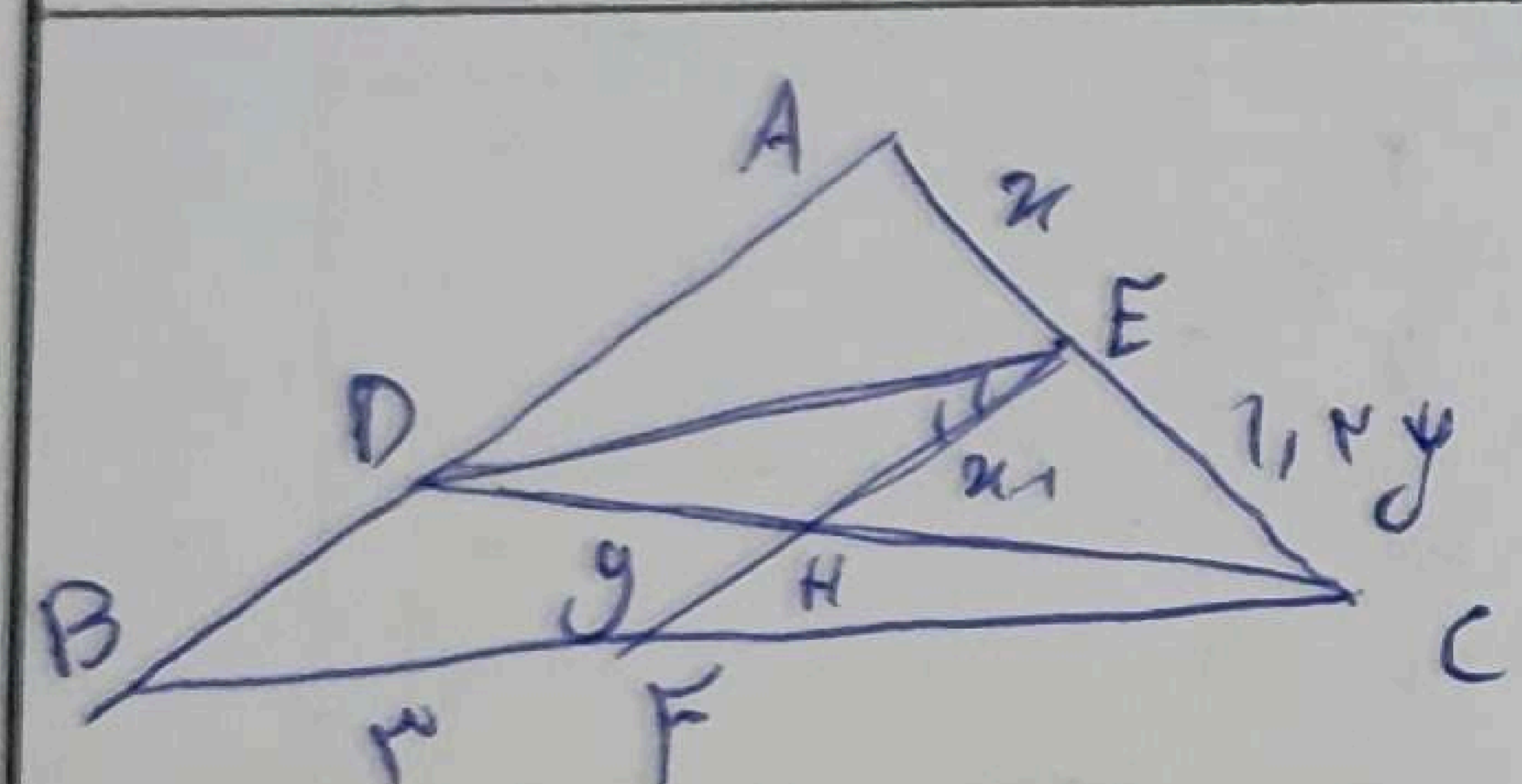
$\overline{AC} = \sqrt{(3x)^2 + (3x)^2} = 3\sqrt{2}x$ ، $\overline{AF} \in \overline{AC}$ ، $\frac{1}{4}\overline{AC} = \overline{AF}$ ، $AF = \frac{3\sqrt{2}}{4}x$ } نسبت $= \frac{\sqrt{5}}{3}$ ✓

۲ (۲)



$\hat{AED} = \hat{ACB}$ ، $\hat{A}$ مشترک } زز $\to \frac{AE}{AC} = \frac{AD}{AB} \Rightarrow \frac{x}{15} = \frac{2}{x+1} \Rightarrow x^2 + x - 30 = 0$ ↗ $x = 5$ ✓ ↘ $x = -6$ غ ق ق

۳ (۲)



$3y = 5x$ $H_2 = H_1$ ، $E_1 = F_1$ } زز $\to HDE \sim HFC$

$\frac{3}{5}\frac{x}{y} = \frac{DE}{CF}$ ($DE \to 3z$ ، $CF \to 5z$)

$DE \parallel BC \longrightarrow \frac{DE}{BC} = \frac{AD}{AB} = \frac{AE}{AC}$

$3y = 5x$

$1.2y = \frac{5}{3}x \times \frac{6}{5}x$

$1.2y = 2x$

$\frac{3z}{5z+3} = \frac{x}{1.2y+x} \Rightarrow \frac{3z}{5z+3} = \frac{x}{3x}$

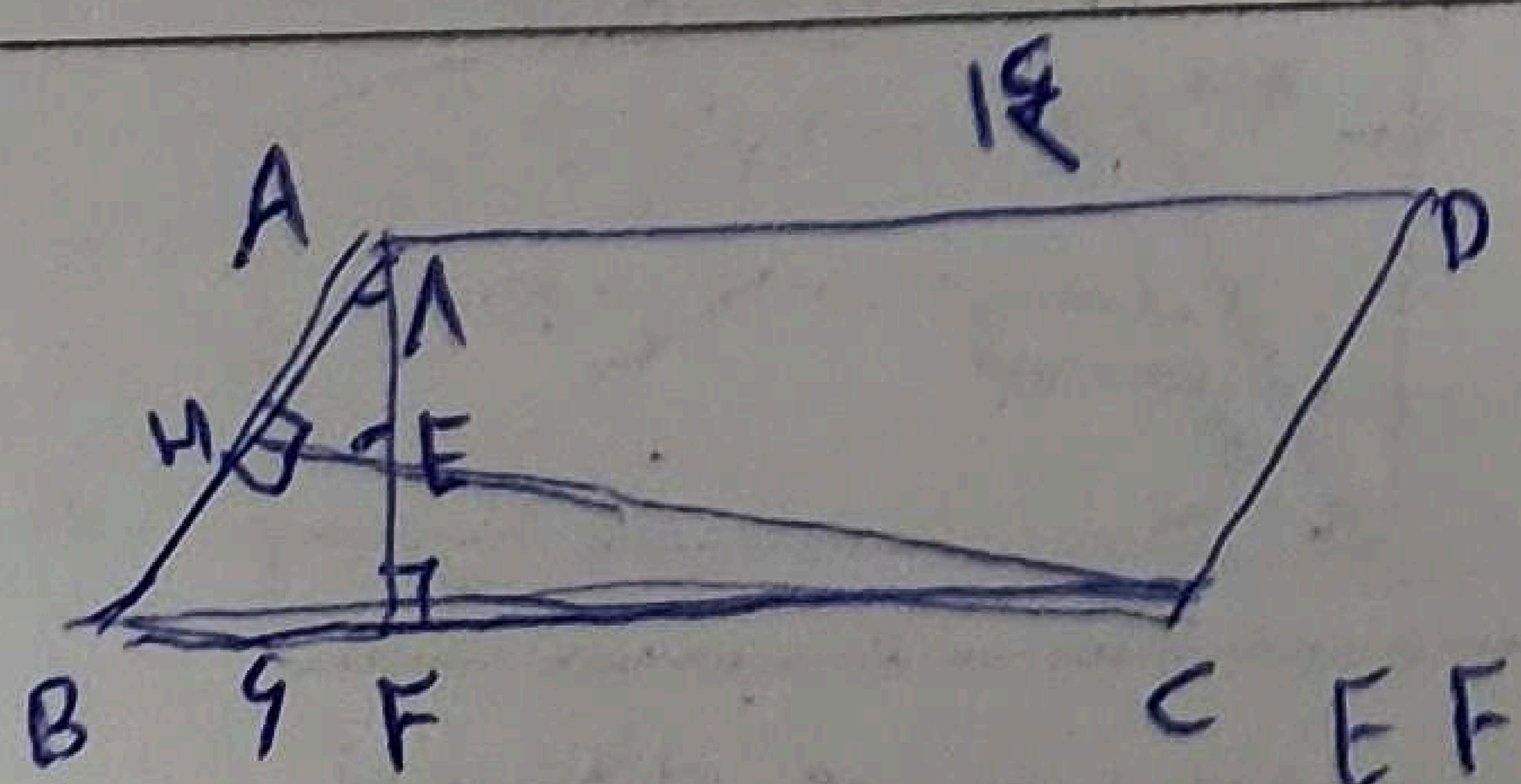
$BC = 3 + 5z = \frac{37}{4}$ ✓

۴ (۱٫۷۵)

$AB^2 = AH \times AC \Rightarrow AB = 4\sqrt{5}$ ✓ نسبت $\longrightarrow$ ۲

$BC^2 = CH \times AC \Rightarrow BC = 8\sqrt{5}$

۵ (۲)



$EF = x$

$E_2 = E_1$ ، $90 = H_1 = F_1$ } زز $\to \overset{\triangle}{AHE} \sim \overset{\triangle}{FEC}$

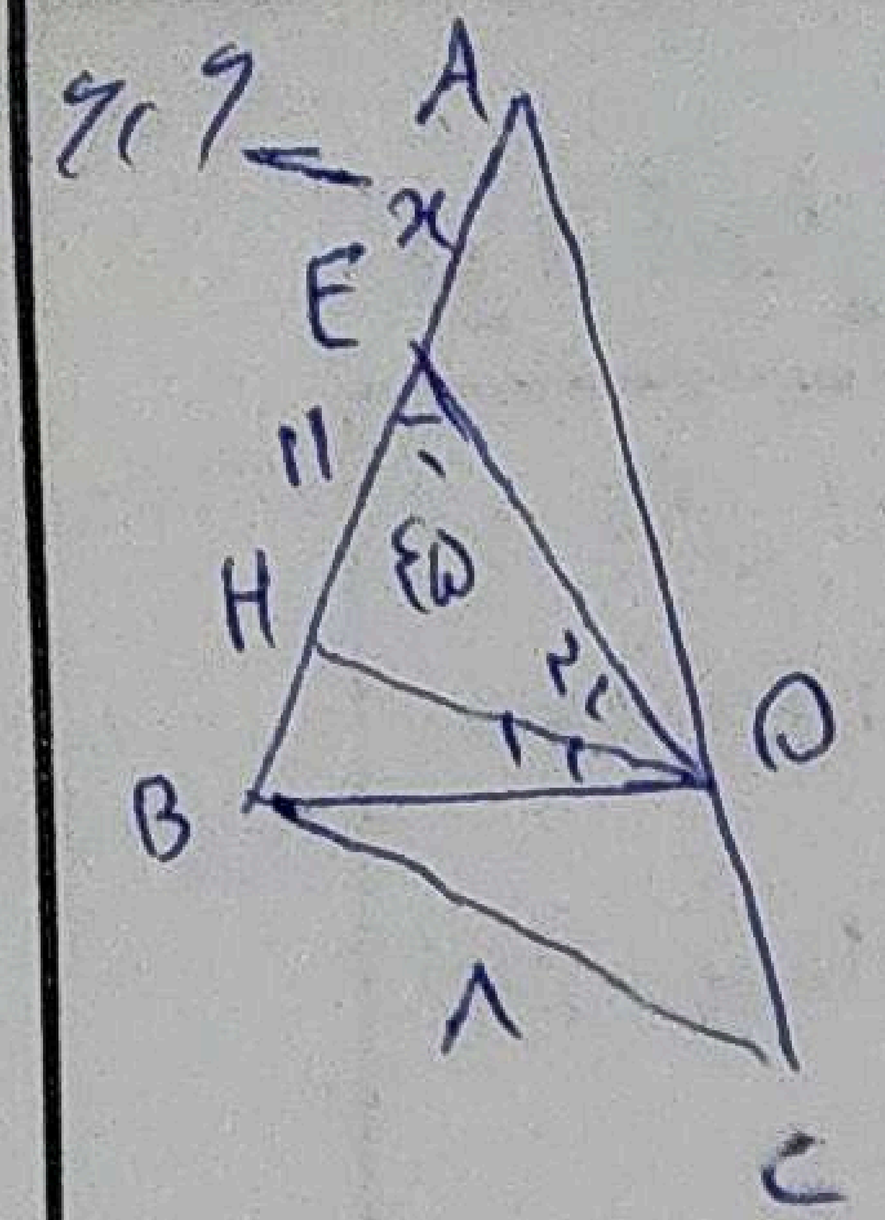
$EF = 4$

$AF = 8 + 4 = 12$ ✓

$A_1 = C_1$ ، $F_1 = F_2 = 90$ } زز $\to \overset{\triangle}{ABF} : \overset{\triangle}{FEC}$

$\frac{AB}{CE} = \frac{BF}{FE} = \frac{AF}{FC} \Rightarrow \frac{6}{x} = \frac{8+x}{8}$

$x^2 + 8x - 48 = 0$ ↙ -12 غ ↘ 4 ✓



$B_1 = B_2$

$DH \parallel BC \rightarrow B_2 = D_1$

$B_1 + D_1 = ۹۰$, $B_1 + B_2 = ۹۰$ } $B_1 = B_2$, $B_1 = B_2 = D_1 = ۴۵$

$B_1 + E_1 = ۹۰$

$۴۵ + E_1 = ۹۰ \downarrow ۴۵^\circ$

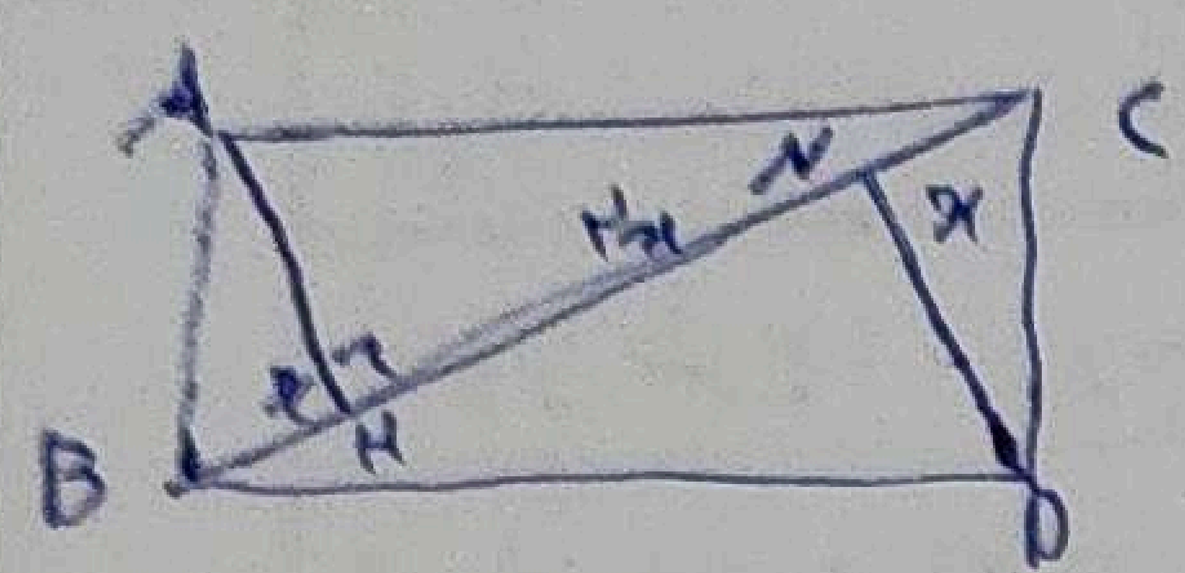
$HD^2 = \sqrt{(۵/۵)^2} = ۵/۵$

$E_1 = B_1 \rightarrow BD = ED$, $D = ۹۰$ } $EH = BH$, $\frac{۱۱}{۲} = ۵/۵$

$DH \parallel BC \rightarrow \frac{DH}{BC} = \frac{AH}{AB} \Rightarrow \frac{۵/۵}{۸} = \frac{x + ۵/۵}{x + ۱۱} \Rightarrow ۵/۵x + ۶۰/۵ = ۸x + ۴۴$

$x = ۶/۶$ ✓

(۲) ۶



$\overset{\triangle}{ABC} \rightarrow AH^2 = BH \times BC$

$AH^2 = x \times ۳x$

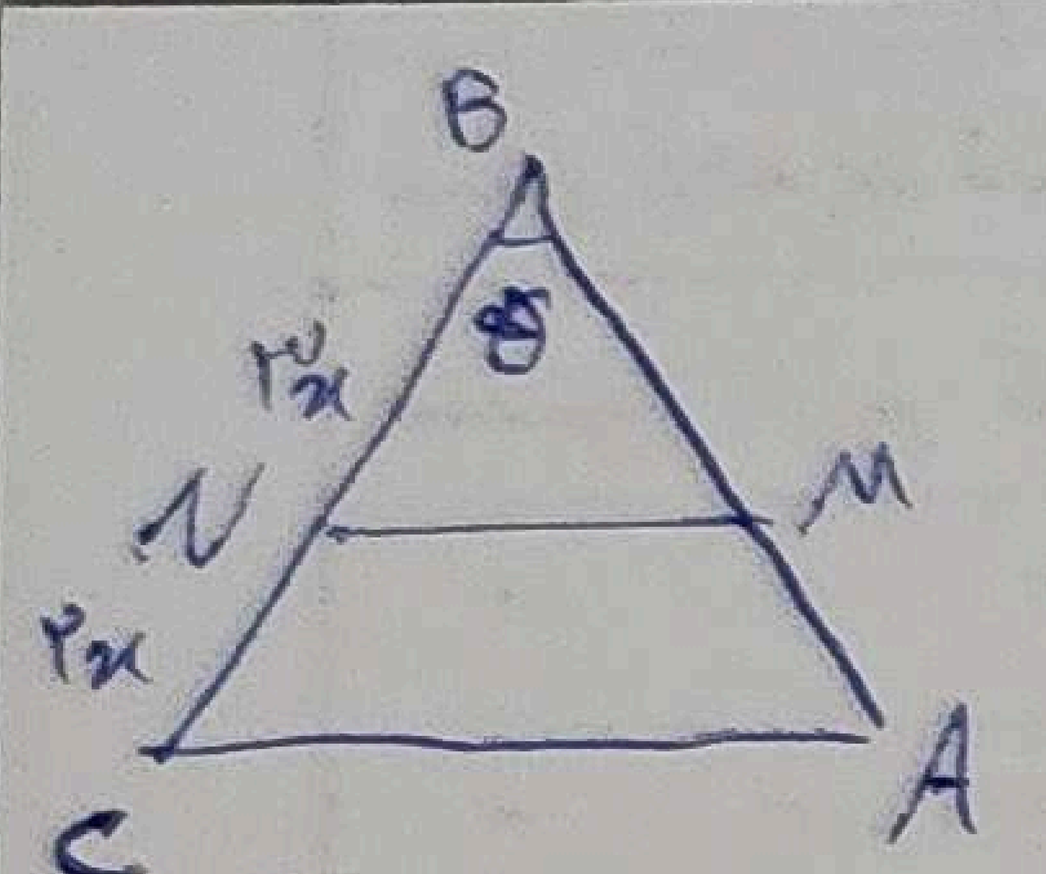
$AH = \sqrt{۳}x$

$S \rightarrow ABC\ S^? = ۴\sqrt{۳}x^2$

$\overset{\triangle}{NCD} \cong \overset{\triangle}{ABH}\ S = \frac{\sqrt{۳}x \times x}{۲} = \frac{\sqrt{۳}x^2}{۲}$

$\frac{S_{مستطیل}}{S_{ABH}} = \frac{۴\sqrt{۳}x^2}{\frac{\sqrt{۳}x^2}{۲}} = ۸$ ✓

(۲) ۷



$۲BN = ۳NC$

$\frac{S_{\overset{\triangle}{ABC}}}{S_{ANM}} = \frac{\frac{۱}{۲} \sin\theta\ BC \times AB}{\frac{۱}{۲} \sin\theta\ BN \times BM} = ۳$

$\frac{BC \times AB}{BN \times BM} = \frac{۵x}{۳x} \times \frac{BM + MA}{BM} = ۳$

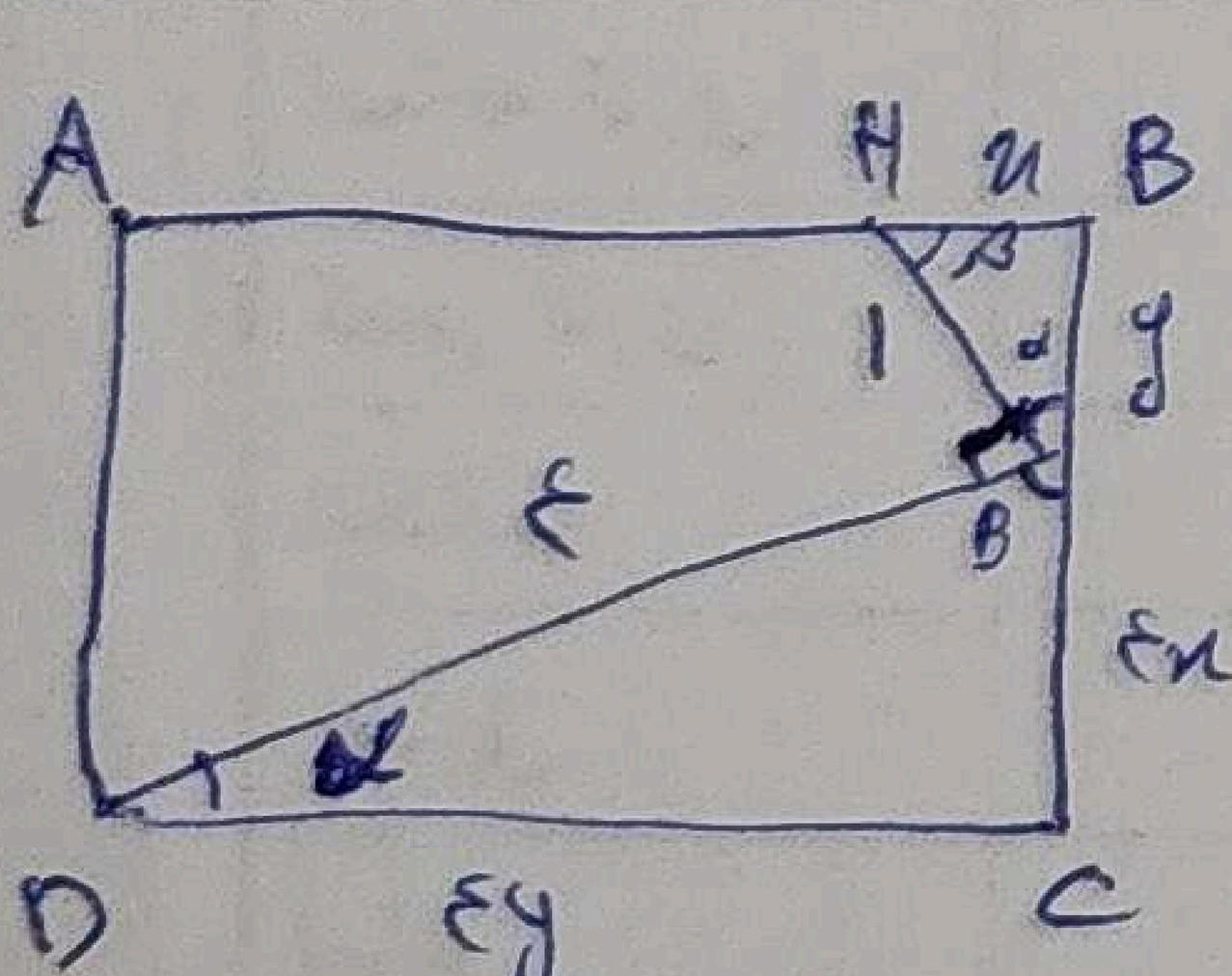
$\frac{BM + MA}{BM} = \frac{۹}{۵}$

$۱ + \frac{MA}{MB} = \frac{۹}{۵}$

$\frac{MA}{MB} = \frac{۴}{۵}$

$\frac{BM}{AM} = \frac{۵}{۴}$ ✓

(۲) ۸



$x^2 + y^2 = ۱ \rightarrow ۴x + y = ۴y$

$۳y = ۴x$

$y = \frac{۴}{۳}x$

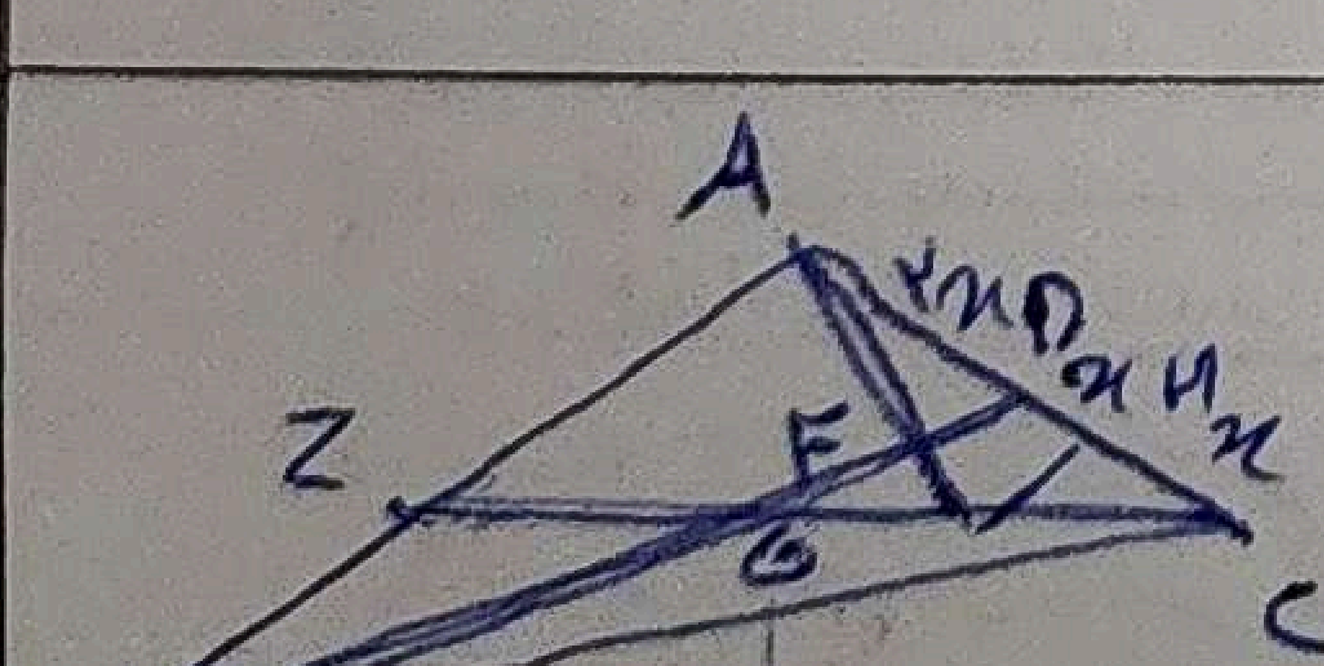
$۴y = \frac{۱۶}{۵}$

$\frac{۲۵x^2}{۹} = ۱$

$\frac{۵}{۳}x = ۱$ $x = \frac{۳}{۵}$, $y = \frac{۴}{۵}$

$S_{مربع} = (۴y)^2 = (\frac{۱۶}{۵})^2 = \frac{۲۵۶}{۲۵}$ ✓

(۲) ۹



برخورد ۳ میانه

$GE = EC$

AB (میانه) , $EH \parallel BD \rightarrow BD$ (میانه) $\Rightarrow AD = DC$

$HE \parallel BD \Rightarrow \frac{FD}{EH} = \frac{AD}{AH} = \frac{۲x}{۳x} = \frac{۲}{۳}$

$HE \parallel BD \rightarrow \frac{EH}{GD} = \frac{CH}{CD} = \frac{x}{۲x} = \frac{۱}{۲}$

G ثقل $= \frac{GD}{BG} = \frac{۱}{۲}$, $\frac{EH}{BD} = \frac{۱}{۶}$

$\frac{۱}{۳} \times \frac{۱}{۲} = \frac{۱}{۶}$

$\frac{FD}{BD} \times \frac{FD}{EH} \times \frac{EH}{BD} = \frac{۱}{۹}$

$\frac{BD}{FD} = ۹$ ✓

(۲) ۱۰