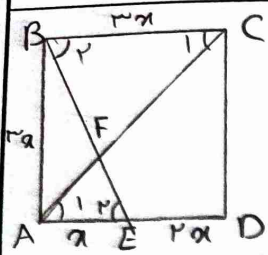


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نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره ۲۱... کلاس: یازدهم پسر A



$$\overline{BC} \parallel \overline{AE}, \overline{BE} \perp \overline{AC} \rightarrow \hat{C}_1 = \hat{A}_1, \hat{B}_2 = \hat{E}_2$$

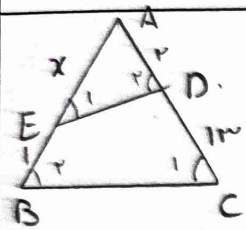
$$\therefore \triangle BCF \cong \triangle AFE \rightarrow \frac{AE}{BC} = \frac{AF}{CF} = \frac{FE}{BF} = \frac{1}{3}$$

$$BE = \sqrt{AB^2 + AE^2} = \sqrt{10}x, AC = 3\sqrt{2}x$$

$$\left. \begin{aligned} BF &= 3FE \rightarrow \sqrt{10}x = 4FE \rightarrow FE = \frac{\sqrt{10}}{4}x \\ CF &= 3AF \rightarrow 3\sqrt{2}x = 4AF \rightarrow \frac{3\sqrt{2}}{4}x = AF \end{aligned} \right\} \frac{FE}{AF} = \frac{\sqrt{2}}{3} \checkmark$$

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$$\hat{A} = \hat{A}, \hat{AED} = \hat{ACB} \rightarrow \triangle AED \sim \triangle ABC$$

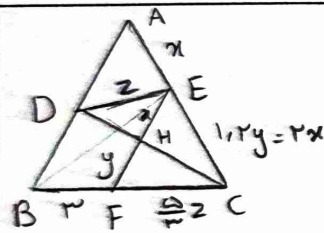
$$\rightarrow \frac{AC}{AE} = \frac{AB}{AD} = \frac{BC}{ED} \rightarrow \frac{1+x}{x} = \frac{1+3}{1} \rightarrow x(x+1) = 3$$

$$L \rightarrow x = 1 \checkmark$$

مقدار دینی نیز قابل قبول است

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$$3y = 4x \rightarrow y = \frac{4}{3}x$$

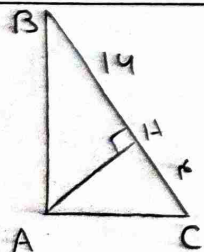
$$\overline{DE} \parallel \overline{BC} \xrightarrow{\text{تالس}} \frac{AE}{AC} = \frac{DE}{BC} = \frac{1}{3} \checkmark$$

$$\overline{DE} \parallel \overline{FC} \rightarrow \frac{DH}{HC} = \frac{HE}{HF} = \frac{DE}{FC} \rightarrow \frac{2}{FC} = \frac{x}{\frac{4}{3}x} \rightarrow FC = \frac{6}{x} \checkmark$$

$$\rightarrow \frac{2}{\frac{6}{x} + \frac{6}{2}} = \frac{1}{3} \rightarrow 2 = \frac{9}{x} \checkmark \rightarrow BC = 3 + \frac{6}{x} = 4, \text{ و } \frac{6}{x} = 1 \checkmark$$

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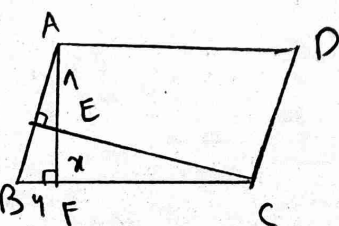
$$AC^2 = CH \cdot BC = 1 \times 20 \rightarrow AC = \sqrt{20}$$

$$AB^2 = BH \cdot BC = 14 \times 20 \rightarrow AB = 1\sqrt{20}$$

$$\frac{AB}{AC} = \frac{1\sqrt{20}}{\sqrt{20}} = 1 \checkmark$$

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$$\left. \begin{aligned} \hat{A} &= \hat{C} \\ \hat{F}_1 &= \hat{F}_2 \end{aligned} \right\} \Rightarrow \triangle ABF \sim \triangle CFE$$

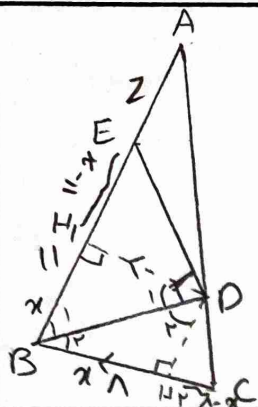
$$L \rightarrow \frac{BF}{EF} = \frac{AF}{CF}$$

$$L \rightarrow \frac{4}{x} = \frac{1+x}{x} \rightarrow x = 1 \checkmark$$

$$L \rightarrow AF = 1 + 1 = 2 \checkmark$$

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$$DH \parallel BC \rightarrow \hat{B} = 90^\circ$$

$$\frac{\Lambda - \alpha}{\Lambda} = \frac{\sqrt{11\alpha - \alpha^2}}{2 + 11}$$

$$z = 4.4$$

$$\left. \begin{array}{l} BD = DB \\ \hat{B}_1 = \hat{B}_r \\ \hat{D}_1 = \hat{D}_r \end{array} \right\}$$

$$\Rightarrow \triangle BH_1D \cong \triangle BH_rD$$

$$\rightarrow \frac{z}{14} = \frac{11}{r(2+11)} \uparrow$$

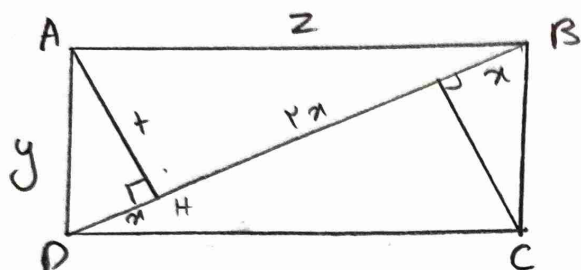
$$\rightarrow BH_1 = BH_r = \alpha$$

$$\hat{B}_1 = \hat{B}_r = 90^\circ \rightarrow \hat{D}_1 = \hat{D}_r = 90^\circ \rightarrow \overline{BH_1} = \overline{H_rD}$$

$$H_rD = \sqrt{H_rE \cdot H_rB} = \sqrt{11\alpha - \alpha^2} \rightarrow \alpha = \sqrt{11\alpha - \alpha^2} \rightarrow \alpha = \frac{11}{r}$$

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$$z^2 + y^2 = 14\alpha^2$$

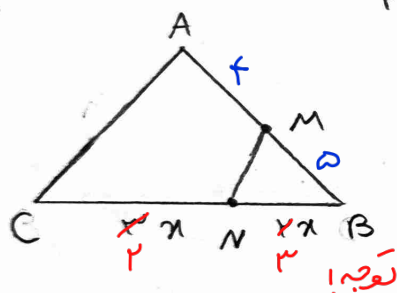
$$z^2 = 9\alpha^2 + t^2, y^2 = \alpha^2 + t^2$$

$$\rightarrow 10\alpha^2 + t^2 = 14\alpha^2 \rightarrow t = \alpha\sqrt{4}$$

$$\frac{S_{ABCD}}{S_{ADH}} = \frac{\sqrt{4}\alpha \cdot r\alpha}{\alpha \cdot \frac{\sqrt{4}\alpha}{r}} = 1 \checkmark$$

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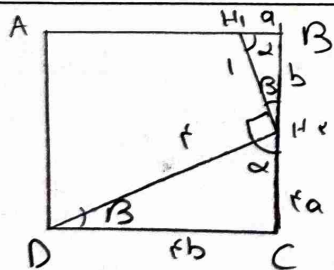
$$\frac{S_{ABC}}{S_{BMN}} = \frac{\omega\alpha \cdot \sin\alpha \cdot AB}{\frac{\omega}{r}\alpha \cdot \sin\alpha \cdot BM}$$

$$\rightarrow \frac{\omega}{r\alpha} \times \frac{AB}{BM} = r \rightarrow \frac{AB}{BM} = \frac{r}{\omega} \times \frac{9}{\alpha}$$

$$\rightarrow \frac{BM}{AM} = \frac{\omega}{4} \quad \frac{BM}{AM} = \boxed{\frac{\omega}{r}}$$

(1,2)

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$$\triangle BH_1H_r \sim \triangle DCH_r \rightarrow \frac{BH_1}{CH_r} = \frac{BH_r}{CD} = \frac{1}{r}$$

$$fa + b = fb \rightarrow fa = rb \rightarrow a = \frac{r}{f}b$$

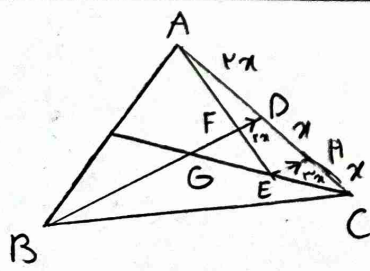
$$\rightarrow \frac{9}{14}b^2 + b^2 = 1 \rightarrow b = \frac{r}{\omega}, a = \frac{r}{\omega}$$

$$S = (fb)^2 = \frac{1}{r^2} \rightarrow b = \frac{r}{\omega} \quad z = \frac{14}{\omega}$$

$$S = \boxed{\frac{124}{r\omega}}$$

(1,2)

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$$EH \parallel GD \rightarrow \frac{CE}{GE} = \frac{CA}{FD} = 1$$

$$\rightarrow \frac{AD}{AH} = \frac{FD}{EH} \rightarrow \frac{FD}{EH} = \frac{r}{r} \rightarrow FD = r\alpha, EH = r\alpha$$

$$\rightarrow \frac{CH}{CD} = \frac{EH}{GD} \rightarrow GD = 4\alpha \Rightarrow BG = r \times GD = 14\alpha$$

$$\rightarrow DB = 14\alpha \Rightarrow \frac{BD}{FD} = \frac{14\alpha}{r\alpha} = 9 \checkmark$$

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