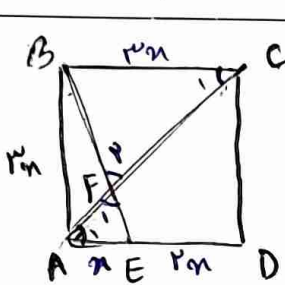


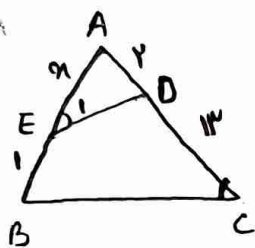
نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره ۲۱... کلاس: A



$$\begin{aligned} \hat{A}_1 = \hat{C}_1, \hat{F}_1 = \hat{F}_2 \} & \triangle AFB \sim \triangle CFB \Rightarrow \frac{AE}{BE} = \frac{BF}{FE} = \frac{CF}{AF} = \frac{1}{2} \\ BE^2 &= 9n^2 + n^2 \Rightarrow BE = \sqrt{10}n = 2FE \Rightarrow FE = \frac{\sqrt{10}}{2} \\ AC^2 &= 9n^2 + 4n^2 \Rightarrow AC = \sqrt{13}n = 2AF \Rightarrow AF = \frac{\sqrt{13}}{2} \\ \frac{EF}{AF} &= \frac{\frac{\sqrt{10}}{2}}{\frac{\sqrt{13}}{2}} = \left(\frac{\sqrt{10}}{\sqrt{13}} \right) \checkmark \end{aligned}$$

(۲)

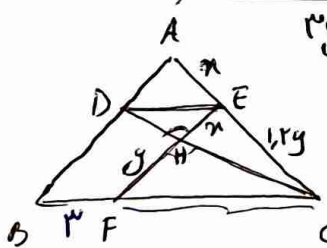
۱



$$\begin{aligned} \hat{A} = \hat{A}, \hat{E}_1 = \hat{C} \} & \triangle AED \sim \triangle ACB \Rightarrow \frac{AE}{AC} = \frac{AD}{AB} = \frac{ED}{BC} \\ \frac{n}{10} &= \frac{p}{n+1} \quad n(n+1) = 10 \\ n &= 8 \checkmark \end{aligned}$$

(۲)

۲



$$py = 8n$$

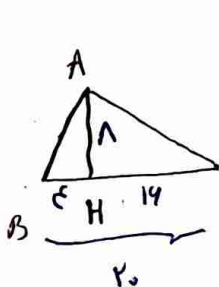
$$\frac{n}{n+1, py} = \frac{DE}{FC+py} \xrightarrow{(py=8n)} \frac{n}{n+8n} = \frac{DE}{FC+8n} \Rightarrow DE = FC + 8n$$

$$\begin{aligned} H_1 = H_2, E_1 = F_1 \} & \triangle DHE \sim \triangle CHF \Rightarrow \frac{DE}{FC} = \frac{EH}{FH} = \frac{n}{y} \xrightarrow{py=8n} \frac{r}{8} \end{aligned}$$

$$DE = \sqrt{FC} \Rightarrow (DE - 8n) = 9 \Rightarrow DE = 9 \Rightarrow FC = \frac{10}{9} \checkmark \quad BC = \frac{10}{9} \checkmark$$

(۱, ۷۵)

۳



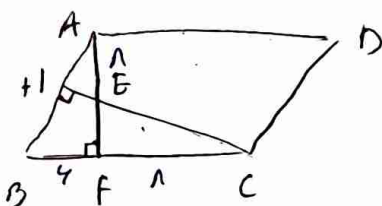
$$AH^2 = 8 \times 14$$

$$AH = 11$$

$$\begin{aligned} \Rightarrow AB &= 8\sqrt{2} \\ \Rightarrow AC &= 11\sqrt{2} \\ \frac{8\sqrt{2}}{11\sqrt{2}} &= \left(\frac{1}{2} \right) \checkmark \end{aligned}$$

(۲)

۴



$$AB^2 = AF^2 + BF^2 \Rightarrow AB = \sqrt{AF^2 + 4}$$

$$S = BC \times AF = 12 \times AF = AB \times CH$$

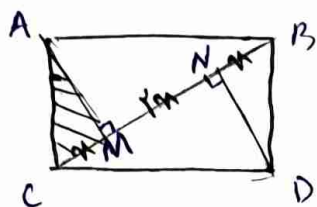
$$\begin{aligned} \triangle ABF &\sim \triangle EFC \\ \frac{AF}{FC} &= \frac{BF}{EF} \\ \frac{AF}{1} &= \frac{4}{AF-1} \end{aligned}$$

$$\Rightarrow AF^2 - AF - 4 = 0 \quad AF = 14 \checkmark$$

(۲)

۵

۱۴



$$AM^2 = n \times r \rightarrow AM = \sqrt{r} n$$

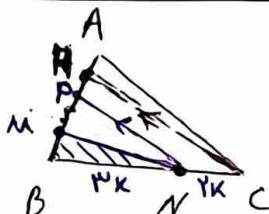
سوال ۷

$$S = \gamma S = \gamma \left(\frac{\sqrt{r} n \times \epsilon n}{\gamma} \right) = \epsilon \sqrt{r} n^2$$

$$S = \frac{\sqrt{r} n \times n}{\gamma} = \frac{\sqrt{r}}{\gamma} n^2$$

$$\frac{\epsilon \sqrt{r} n^2}{\frac{\sqrt{r}}{\gamma} n^2} = 1$$

۲
✓



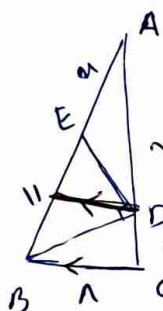
$$MN \parallel CH: \text{نسبت} \Rightarrow \frac{BN}{BC} = \frac{PN}{HC} = \frac{r}{8} \Rightarrow \frac{PN}{CH} = \frac{r}{8}$$

$$S_{BMN} = \frac{PN \times MB}{\gamma}$$

$$S_{ABC} = \frac{CH \times AB}{\gamma} = \frac{r}{\gamma} \times \frac{PN \times MB}{\gamma} \Rightarrow AB = \frac{9}{8} MB$$

$$\frac{MB}{AB} = \frac{8}{9} \Rightarrow \frac{MB}{MA} = \frac{8}{\epsilon}$$

۲
✓



نیمساز به نسبت دو ضلع زاویه قطع کنند و مساحت آن به نسبت ضلع مربع اند

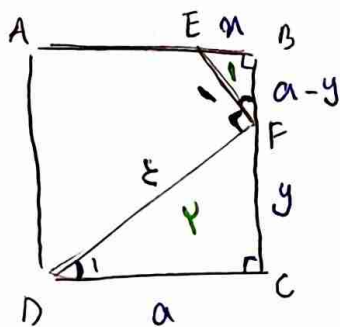
سوال ۶

نسبت AB^2 ؟

$$h^2 = \frac{2}{3} \times \frac{2}{3} \rightarrow h = \frac{2}{3}$$

$$\text{نسبت} = \frac{n + \frac{2}{3}}{11 + n} = \frac{\frac{2}{3}}{11} \rightarrow n = \frac{22}{3}$$

۰
۶
✓



$$\Delta_1 \sim \Delta_2 \Rightarrow \frac{DC}{BF} = \frac{FC}{EB} = \frac{DF}{FE} \epsilon$$

$$(\hat{F}_1 = \hat{D}_1, \hat{B} = \hat{C})$$

$$\Rightarrow \frac{a}{a-y} = \epsilon \Rightarrow a = \frac{\epsilon}{\gamma} y, \quad \frac{y}{a} = \epsilon \quad n = \frac{y}{\epsilon}$$

$$n + (a-y)^2 = 1$$

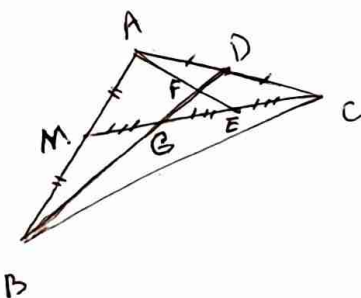
$$\frac{y}{\gamma} + (\epsilon y - y)^2 = 1$$

$$S_{\Delta} = \frac{204}{\gamma 8}$$

$$a = \frac{19}{8}$$

$$\left(\frac{14+9}{144} \right) y^2 = 1 \Rightarrow y = \frac{12}{8} \Rightarrow a = \frac{\epsilon}{\gamma} \times \frac{12}{8}$$

۲
۹



مرکز ثقل محل برخورد میانه ها

میانه ها به نسبت ۱ به ۲ قطع می شوند

افزودن خطی عوارضی رسم شود به شکل متساوی الساقین

$$\frac{BD}{FD} = \frac{2}{1}$$

۰
۱۰

$$G \rightarrow BG = 2n \quad GD = n \rightarrow BD = 3n$$

۱۰-

از A به G وصل کنیم، AE، GD، AGC مرتباً:

$$\begin{aligned} GF &= \frac{2}{3}n \\ FD &= \frac{1}{3}n \end{aligned} \Rightarrow \frac{BD}{FD} = \frac{3n}{\frac{1}{3}n} = \boxed{9}$$