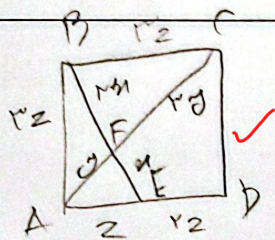


۱۸، ۲۵

نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره ۲۱ کلاس: لادن سید



$$B_1 = E_1, \angle_1 = \angle_1 \rightarrow \triangle AEF \sim \triangle BCF$$

$$\rightarrow \triangle ABC: \left. \begin{array}{l} \angle B = 90^\circ \\ \angle A = 45^\circ \end{array} \right\} \frac{EF}{AF} = \frac{1}{2}$$

(۵، ۵)

۱

$$\frac{x}{10} = \frac{1}{2+1} \rightarrow x^2 + x - 10 = 0 \rightarrow x = 2 \checkmark$$

(۲)

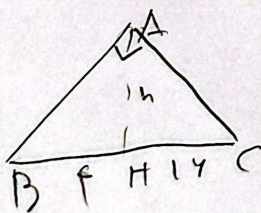
۲

$$\frac{DE}{FC} = \frac{1}{2}$$

$$\frac{DE}{BF+FC} = \frac{x}{1+x+x} = \frac{1}{3} \rightarrow BC = BF+FC = \frac{10}{3}$$

(۲)

۳



$$\left. \begin{array}{l} AB \cdot h = BH \cdot AC \\ AC \cdot h = CH \cdot AB \end{array} \right\} \frac{AC}{AB} = 2 \checkmark$$

(۲)

۴

$$\left. \begin{array}{l} FC = BC - BF = 1 \\ B \hat{H} C \Rightarrow B + C = 90 \\ \angle F C \Rightarrow E_1 + C_1 = 90 \end{array} \right\}$$

$$\left. \begin{array}{l} EF(1+EF) = 4 \times 1 \\ \rightarrow EF^2 + 1 \cdot EF - 4 = 0 \end{array} \right\}$$

$$\Rightarrow EF = 2 \checkmark$$

$$AF = 2 + 1 = 3$$

(۱، ۷، ۵)

۵

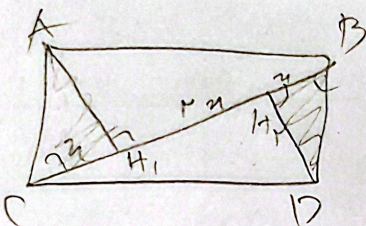
$$\frac{D_1 + B_1}{B_1} = 90 \rightarrow D_1 = B_1 = 45$$

$$P_1 = 90 - D_1 = 45$$

$$E_1 = 90 - B_1 = 45$$

$$HE = BH = HD = 0.10$$

$$\frac{AE + 0.10}{AE + 11} = \frac{0.10}{1} \rightarrow 1.0 AE = 17.8 \rightarrow AE = 17.8$$



$$CH_1 = CH_2 = x$$

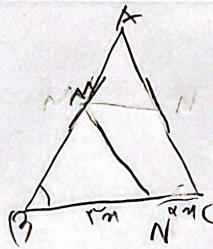
$$AC = BD$$

$$AC \parallel BD$$

$$S_{ACH_1} = S_{BDH_2}$$

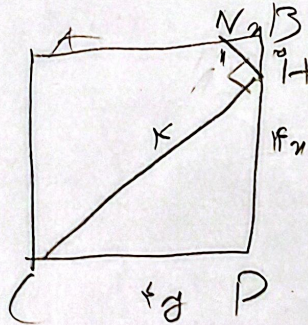
$$S_{ACH_1} = \frac{1}{2} S_{ABC} = \frac{1}{2} S_{BDC}$$

$$S_{ACH_1} = \frac{1}{2} S_{ABC} \rightarrow S_{ACH_1} = \frac{1}{2} S_{ABC}$$



$$\frac{1}{2} S_{ABC} = \frac{1}{2} S_{MNC} \rightarrow \frac{1}{2} S_{ABC} = \frac{1}{2} S_{MNC}$$

$$\frac{AM + BM}{BM} = \frac{9}{2} \rightarrow \frac{BM}{AM} = \frac{1}{7}$$

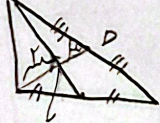
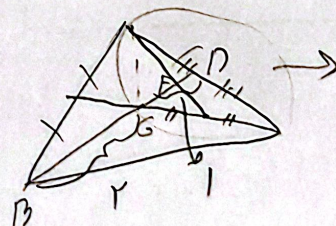


$$NBH \sim HDC \rightarrow \frac{NB}{HD} = \frac{1}{r}$$

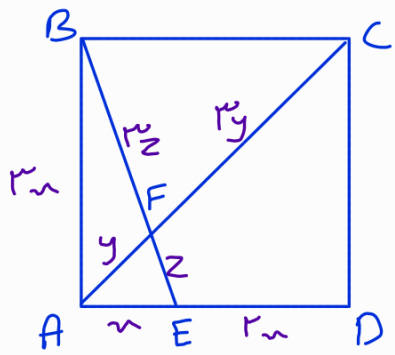
$$x^2 + y^2 = 1$$

$$k^2 = y^2 + r^2 \rightarrow k = \frac{r}{r} \theta$$

$$\left(\frac{1}{r} \right)^2 = \left(\frac{r}{r} \right)^2$$



$$r = 1 \rightarrow FD = \frac{1}{r} \rightarrow BD = r \rightarrow \frac{BD}{FD} = r$$



1- دو مثلث AEF و BFC با نسبت 3 قسماً به اندازه:

$$(BE)^r = (\cancel{AE})^r + (\cancel{AB})^r \rightarrow BE = \sqrt{10} \cdot n$$

$$r_z = \sqrt{10} \cdot n \rightarrow z = \frac{\sqrt{10} \cdot n}{r}$$

$$(AC)^r = (\cancel{AD})^r + (\cancel{CD})^r \rightarrow AC = 3\sqrt{2} \cdot n$$

$$r_y = 3\sqrt{2} \cdot n \rightarrow y = \frac{3\sqrt{2} \cdot n}{r}$$

$$\frac{EF}{AF} = \frac{z}{y} = \frac{\frac{\sqrt{10}}{r} \cdot n}{\frac{3\sqrt{2}}{r} \cdot n} = \boxed{\frac{\sqrt{5}}{3}}$$