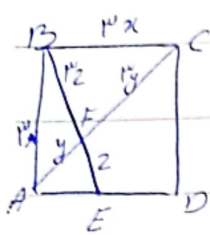


« زنده ماندن » « ایستادن » « ایستادن و رفتن »



$$\triangle ADC \Rightarrow \sqrt{9x^2 + 9x^2} = 3\sqrt{2}x = AC$$

$$\triangle ABE \Rightarrow \sqrt{9x^2 + 4x^2} = \sqrt{13}x = BE$$

$$\triangle AFE \sim \triangle CFB \rightarrow \frac{AF}{EF} = \frac{CF}{FB} = \frac{AE}{BC} = \frac{x}{3x} = \frac{1}{3}$$

$$EF = 2 \rightarrow 2 + 1/2 = \sqrt{13}x \rightarrow 2 = \frac{\sqrt{13}x}{2}$$

$$AF = y \rightarrow y + 1/2y = 3\sqrt{13}x \rightarrow y = \frac{3\sqrt{13}x}{3/2} \quad \frac{EF}{AF} = \frac{\frac{\sqrt{13}x}{2}}{\frac{3\sqrt{13}x}{3/2}} = \frac{\sqrt{3}}{3}$$

$$\left. \begin{array}{l} \triangle AED \sim \triangle ACB \\ \hat{A} = \hat{A} \end{array} \right\} \rightarrow \triangle AED \sim \triangle ACB \rightarrow \frac{AE}{AC} = \frac{ED}{BC} = \frac{AD}{AB}$$

$$\frac{x}{3x} = \frac{2}{3x+1} \rightarrow x^2 + x = 2 \rightarrow x = -4 \quad x = 2$$

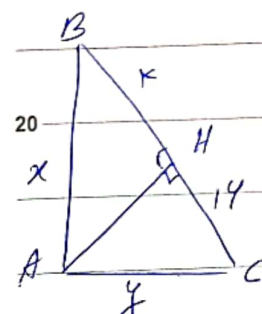
$$y = 2x \quad \triangle ABC: DE \parallel BC \rightarrow \frac{AE}{AC} = \frac{DE}{BC} \rightarrow \frac{x}{x+1/2y} = \frac{DE}{FC+1/2y}$$

$$y = \frac{2}{3}x \quad \frac{x}{x+1/2(\frac{2}{3}x)} = \frac{DE}{1/2+FC} \rightarrow \frac{x}{x+1/3x} = \frac{DE}{1/2+FC} \rightarrow 3DE = 1/2+FC \quad (1)$$

$$DE \parallel FC \rightarrow \frac{DE}{FC} = \frac{EH}{HF} \rightarrow \frac{DE}{FC} = \frac{x}{y} = \frac{1/2}{1/2} \rightarrow DE = FC \quad (2)$$

$$(1) \rightarrow 1/2+FC = 3(\frac{1}{2})FC \rightarrow 1/2+FC = \frac{3}{2}FC \rightarrow FC = 1/2$$

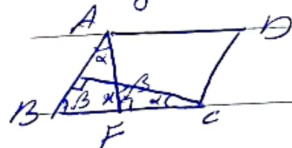
$$BC = BF+FC \rightarrow 1/2+1/2 = 1 \quad (3)$$



$$x^2 = BH \times BC \rightarrow x = \sqrt{8x^2} = \sqrt{14}$$

$$y^2 = CH \times BC \rightarrow y = \sqrt{14x^2} = \sqrt{14}$$

$$\frac{y}{x} = \frac{\sqrt{14}}{\sqrt{14}} = \sqrt{2} \quad \frac{y}{x} = 2 \rightarrow \frac{x}{y} = \frac{1}{2}$$



$$\left. \begin{array}{l} \triangle ABF \sim \triangle CEF \\ \hat{ABF} = \hat{FEC} \end{array} \right\} \rightarrow \triangle ABF \sim \triangle CEF \rightarrow \frac{AF}{CF} = \frac{BF}{EF}$$

$$\frac{x+1}{x} = \frac{4}{x} \rightarrow (x+1)(x-1) = 0 \rightarrow x = -1 \quad x = 1$$

$$AF = x+AE \rightarrow E+1 = 1/2$$

$\Delta ADE \sim \Delta EDB \rightarrow \frac{AE}{ED} = \frac{ED}{DB} \rightarrow \frac{y}{11} = \frac{11}{y+11}$
 $BC \parallel AD, BD \rightarrow \frac{AD}{AB} = \frac{OD}{BC} \rightarrow \frac{y}{11} = \frac{11}{y+11}$
 $14y + 11 = 11y + 111 \rightarrow y = 94$

$S_{\Delta BHC} = \frac{1}{2} BH \times CH$ $S_{\Delta ABC} = \frac{1}{2} BH \times AC$
 $S_{\Delta BHC} = S_{\Delta ABC} + S_{\Delta AHC} = BH \times CH$
 $\frac{BH \times CH}{\frac{1}{2} BH \times AC} = 1$

$S_{\Delta ABC} = \frac{1}{2} AB \times BC \times \sin B$
 $S_{\Delta BMN} = \frac{1}{2} BM \times BN \times \sin B$
 $\frac{AB \times BC}{BM \times BN} = \mu \rightarrow \frac{AB}{BM} = \frac{9}{10} \rightarrow \frac{AB - BM}{BM} = \frac{1}{10}$
 $\frac{AM}{BM} = \frac{1}{10} \rightarrow \frac{BM}{AM} = 10$

$\Delta DEC \sim \Delta EBA \rightarrow \frac{DE}{EB} = \frac{EC}{AB} = \frac{DC}{EA}$
 $\frac{y}{a-x} = \frac{x}{a} = \frac{1}{E} \rightarrow \frac{y}{a-x} = \frac{x}{a} \rightarrow \frac{y}{a-x} = \frac{x}{a} \rightarrow \frac{y}{a-x} = \frac{x}{a}$
 $ABE \rightarrow 14 = a^2 + (a-x)^2 \rightarrow 14 = 14x^2 + 4x^2 \rightarrow x = \frac{1}{2}$
 $a = \frac{14}{8} \rightarrow a = \frac{14}{8} \rightarrow S_{\Delta ABE} = \frac{14}{8} \times \frac{14}{8} = 1.125$

$\Delta AOC \rightarrow AE = GE$
 $GF = \frac{1}{2} y$ $FD = \frac{1}{2} y$ $\frac{BD}{FD} = \frac{14}{\frac{1}{2} y} = 9$