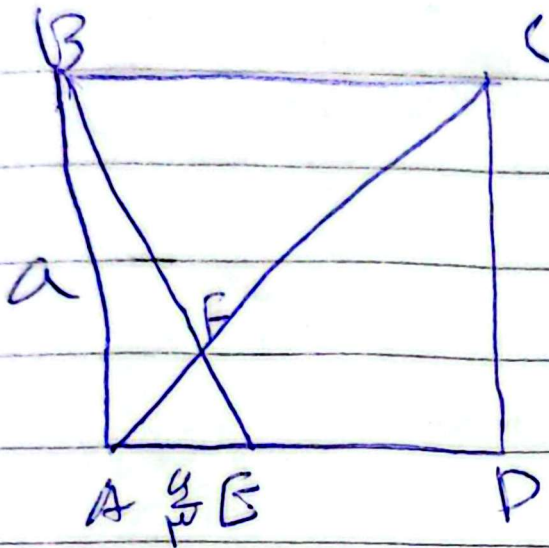


۱۷، ۱۵

موضوع: علی بن ابی طالب ۲۱



$$\frac{AE}{BC} = \frac{EF}{BF} = \frac{1}{3} \quad (۲)$$

$$\rightarrow BF = 3EF \rightarrow BE = 4EF$$

$$CF = 3AF \rightarrow AC = 4AF$$

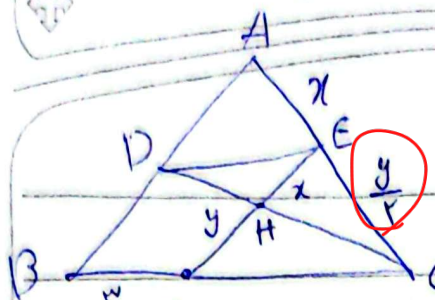
$$BE = \sqrt{a^2 + \frac{a^2}{9}} = \sqrt{10} \frac{a}{3}$$

$$BD = a\sqrt{2} \rightarrow \frac{BE}{AF} = \frac{\frac{1}{4}BE}{\frac{1}{4}AC} = \frac{\sqrt{10} \frac{a}{3}}{a\sqrt{2}} = \sqrt{\frac{10}{2}} = \sqrt{5}$$

$$= \frac{\sqrt{5}a}{3} \quad \checkmark$$

۲- چون فادیه رأس دایره ناظمه دایره مستطیل است پس دایره مستطیل است.

$$\frac{x}{14} = \frac{2}{x+1} \rightarrow x^2 + x - 28 = 0 \rightarrow x = 5 \quad (۲) \quad \checkmark$$



$DE \parallel BC$

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

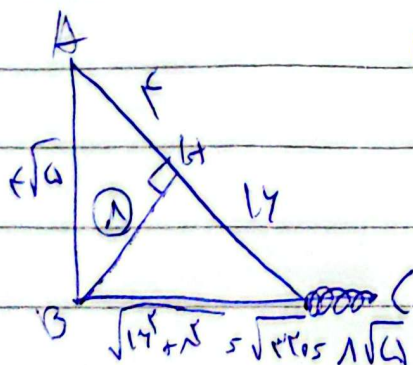
نیچرہ ۱، ۲ جو ۱

$$DE \parallel BC \rightarrow \frac{AE}{AC} = \frac{ED}{BC} \rightarrow \frac{x}{x+y} = \frac{DE}{FC+3} = \frac{x}{\frac{11}{4}x} = \frac{4}{11}$$

$$\rightarrow DE = \frac{4(FC+3)}{11} \rightarrow \frac{DE}{FC} = \frac{x}{y} = \frac{x}{\frac{4}{3}x} = \frac{3}{4}$$

$$\rightarrow \frac{4(FC+3)}{11FC} = \frac{3}{4} \rightarrow 16FC + 48 = 33FC \rightarrow FC = 16$$

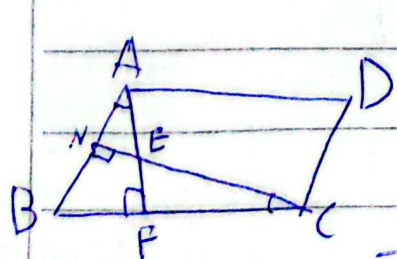
$$\rightarrow BC = FC + BF = 16 + 3 = 19$$



$$BH^2 = AH \cdot AC$$

$$BH^2 = 4^2 \rightarrow BH = 4$$

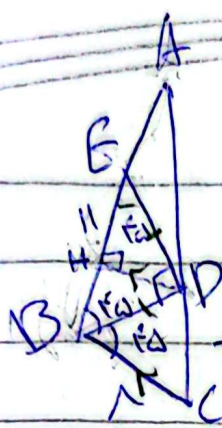
$$\frac{17^2}{14} = 21 \frac{1}{2}$$



$$\triangle AEC \sim \triangle AFB \rightarrow EF \parallel AB$$

$$\rightarrow \frac{EF}{FB} = \frac{FC}{AF} = \frac{EC}{AB} \rightarrow \frac{AF-1}{4} = \frac{1}{AF}$$

$$\rightarrow AF^2 - AF - 4 = 0 \rightarrow AF = 2$$



- ٢

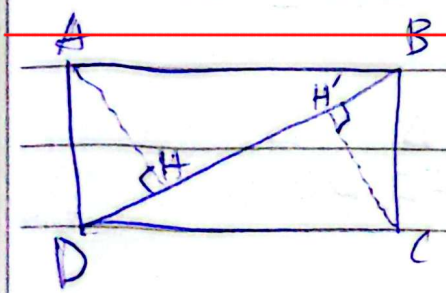
(٢)

$\hat{B} \rightarrow \hat{B}_2 \rightarrow \hat{E} \hat{D} \hat{B}$  (مستقيم)  $\rightarrow$   $\hat{B} = 9^\circ \rightarrow \hat{E} \hat{D} \hat{B} = 9^\circ$   
 نضع:  $BD = x \rightarrow 2x^2 = 141 \rightarrow x^2 = \frac{141}{2}$   
 $\rightarrow x \cdot x = DH \cdot 11 \rightarrow \frac{141}{2} = DH \cdot 11 \rightarrow DH = \frac{11}{2}$   
 $\frac{AH}{AB} = \frac{DH}{BC} \rightarrow \frac{AH}{AB} = \frac{\frac{11}{2}}{14} = \frac{11}{28} \rightarrow \frac{AG + \frac{11}{2}}{AG + 11} = \frac{11}{28}$   
 $\rightarrow 14AG + 11 = 11AG + 11 \rightarrow AG = \frac{11}{5}$  ✓

$DE \parallel BC$  (جزء من)  $\rightarrow \frac{AE}{AC} = \frac{DE}{BC} \rightarrow \frac{2}{3} = \frac{DE}{BC} \rightarrow BC = \frac{3}{2} DE$  - ٣

$\hat{D} = \hat{C}$   
 $\hat{E} = \hat{F}$   
 $\hat{D} \hat{H} \hat{E} \sim \hat{C} \hat{H} \hat{F} \rightarrow \frac{EH}{FH} = \frac{DE}{CF} \rightarrow CF = \frac{2}{3} DE$

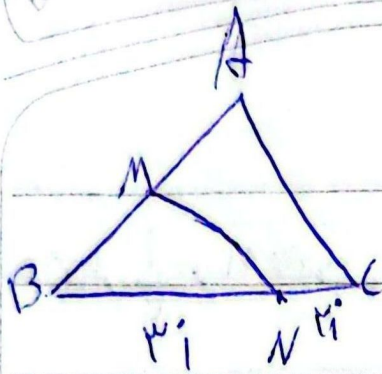
$BC = BF + FC = 2DE = 2 + \frac{2}{3} DE \rightarrow DE = \frac{3}{7}$   $BC = \frac{12}{7}$



$\frac{S_{ABCD}}{S_{AMD}} = ?$  - ٤

(٤, ٧, ٨)

$S_{ABCD} = 2(S_{ABD}) = 2(AH \cdot BD) = 2 \times (AH \cdot HD) = 2 \times S_{AMD}$   
 $\rightarrow \frac{S_{ABCD}}{S_{AMD}} = \frac{2 \times S_{AMD}}{S_{AMD}} = 2$



$$\frac{S_{ABC}}{S_{BMN}} = \frac{1}{4} \quad (1)$$

$$\rightarrow \frac{\frac{1}{2} \times AB \times BC \times \sin B}{\frac{1}{2} \times BM \times BN \times \sin B} = \frac{1}{4}$$

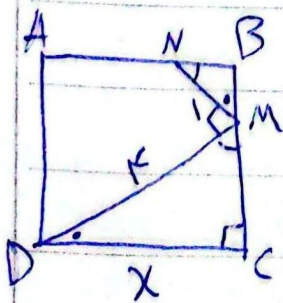
$$\rightarrow \frac{AB \times BC}{BM \times BN} = \frac{1}{4}$$

$$\frac{BC}{BN} = \frac{1}{4}$$

$$\rightarrow \frac{AB}{BM} \times \frac{1}{4} = \frac{1}{4} \rightarrow \frac{AB}{BM} = 1$$

$$\rightarrow \frac{AM + BM}{BM} = \frac{AM}{BM} + 1 = 1$$

$$\rightarrow \frac{AM}{BM} = 0 \rightarrow \frac{BM}{AM} = \frac{1}{0} \quad \checkmark$$



$$\frac{BN}{MC} = \frac{BM}{DC} = \frac{1}{4} \rightarrow BM = \frac{x}{4} \quad (2)$$

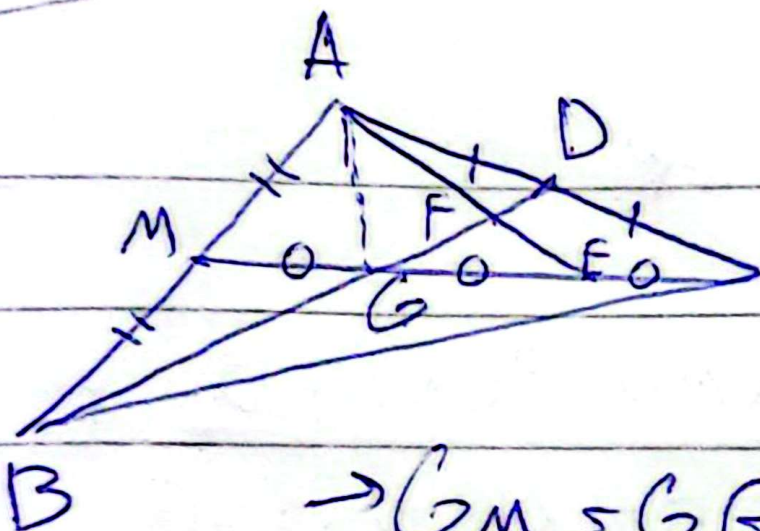
$$\rightarrow MC = \frac{3x}{4} \rightarrow x^2 + \frac{9x^2}{16} = 14$$

$$\rightarrow 14x^2 + 9x^2 = 14 \times 16 \rightarrow 23x^2 = 224 \rightarrow x^2 = \frac{224}{23} \quad \checkmark$$



تاریخ: / /

موضوع:



۱۰- (۲)  $BM = \frac{1}{3} MC$   $\rightarrow$   $GM = \frac{1}{3} MC$  میان

$B \rightarrow GM = GB = GC$  نسبت رو برعکس نوشته  $\frac{BD}{FD} = 9$

$\frac{GD}{BD} = \frac{1}{3}$  میان  $\leftarrow$   $\frac{FD}{GD} = \frac{1}{3}$  میان  $\rightarrow \frac{FD}{BD} = \frac{1}{9}$  ✓

ارفاق