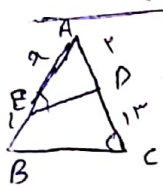


$BC \parallel AD \Rightarrow \hat{A}_1 = \hat{A}_2$ (مقابل)
 $\hat{A}_1 = \hat{A}_2 \Rightarrow \hat{F}_1 = \hat{F}_2$ (مقابل)
 $\hat{F}_1 = \hat{F}_2 \Rightarrow \hat{F}_1 = \hat{F}_2$ (مقابل)
 $\hat{F}_1 = \hat{F}_2 \Rightarrow \hat{F}_1 = \hat{F}_2$ (مقابل)

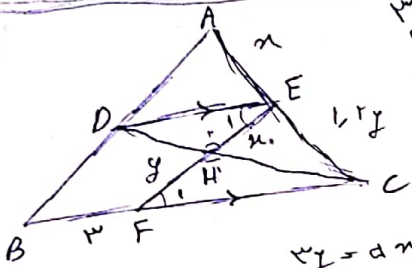
$BE = \sqrt{(2m)^2 + m^2} = \sqrt{5}m$
 $AC = \sqrt{(2m)^2 + (2m)^2} = \sqrt{8}m$
 $EF \in BC, \frac{1}{2}BC = EF \Rightarrow EF = \frac{\sqrt{5}m}{2}$
 $AF \in AC, \frac{1}{2}AC = AF \Rightarrow AF = \frac{\sqrt{8}m}{2}$
 $\frac{EF}{AF} = \frac{\frac{\sqrt{5}m}{2}}{\frac{\sqrt{8}m}{2}} = \frac{\sqrt{5}}{\sqrt{8}} = \frac{\sqrt{10}}{4}$



$AED = ACB$
 $\hat{A} = \hat{A}$
 $AED = ACB$
 $\hat{A} = \hat{A}$
 $\hat{A} = \hat{A}$
 $\hat{A} = \hat{A}$

$\frac{AE}{AC} = \frac{AD}{AB} \Rightarrow \frac{x}{\sqrt{8}m} = \frac{y}{2m} = \frac{z}{2m}$

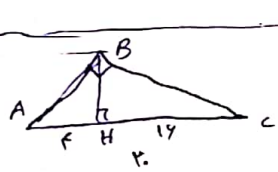
$x + y = 2m$
 $x + y = 2m$
 $x + y = 2m$
 $x + y = 2m$



$x + y = 2m$
 $x + y = 2m$
 $x + y = 2m$
 $x + y = 2m$

$DE \parallel BC \Rightarrow \frac{DE}{BC} = \frac{AD}{AB} = \frac{AE}{AC}$
 $\frac{DE}{BC} = \frac{AD}{AB} = \frac{AE}{AC}$
 $\frac{DE}{BC} = \frac{AD}{AB} = \frac{AE}{AC}$
 $\frac{DE}{BC} = \frac{AD}{AB} = \frac{AE}{AC}$

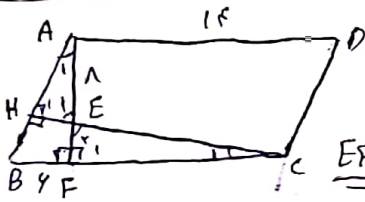
$BC = 2m \Rightarrow \frac{DE}{2m} = \frac{x}{2m} = \frac{y}{2m}$
 $BC = 2m \Rightarrow \frac{DE}{2m} = \frac{x}{2m} = \frac{y}{2m}$
 $BC = 2m \Rightarrow \frac{DE}{2m} = \frac{x}{2m} = \frac{y}{2m}$
 $BC = 2m \Rightarrow \frac{DE}{2m} = \frac{x}{2m} = \frac{y}{2m}$



$AB^2 = AD^2 + BD^2$
 $AB = \sqrt{AD^2 + BD^2}$
 $AB = \sqrt{AD^2 + BD^2}$
 $AB = \sqrt{AD^2 + BD^2}$

$BC^2 = BD^2 + DC^2$
 $BC = \sqrt{BD^2 + DC^2}$
 $BC = \sqrt{BD^2 + DC^2}$
 $BC = \sqrt{BD^2 + DC^2}$

$\frac{AB}{BC} = \frac{\sqrt{AD^2 + BD^2}}{\sqrt{BD^2 + DC^2}} = \frac{1}{2}$



$\hat{A}_1 = \hat{A}_2$
 $\hat{A}_1 = \hat{A}_2$
 $\hat{A}_1 = \hat{A}_2$
 $\hat{A}_1 = \hat{A}_2$

$\hat{A}_1 = \hat{A}_2$
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 $\hat{A}_1 = \hat{A}_2$
 $\hat{A}_1 = \hat{A}_2$

$EF = 4$
 $AE = 12 - EF = 12 - 4 = 8$

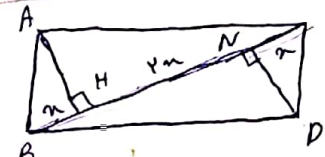
$\frac{AB}{CE} = \frac{BF}{FE} = \frac{AF}{FC} \Rightarrow \frac{4}{n} = \frac{12-n}{12-4} \Rightarrow n = 4$
 $\frac{AB}{CE} = \frac{BF}{FE} = \frac{AF}{FC} \Rightarrow \frac{4}{n} = \frac{12-n}{12-4} \Rightarrow n = 4$
 $\frac{AB}{CE} = \frac{BF}{FE} = \frac{AF}{FC} \Rightarrow \frac{4}{n} = \frac{12-n}{12-4} \Rightarrow n = 4$
 $\frac{AB}{CE} = \frac{BF}{FE} = \frac{AF}{FC} \Rightarrow \frac{4}{n} = \frac{12-n}{12-4} \Rightarrow n = 4$



$\hat{B}_1 = \hat{B}_2$
 $\hat{B}_1 = \hat{B}_2$
 $\hat{B}_1 = \hat{B}_2$
 $\hat{B}_1 = \hat{B}_2$

$\hat{B}_1 = \hat{B}_2$
 $\hat{B}_1 = \hat{B}_2$
 $\hat{B}_1 = \hat{B}_2$
 $\hat{B}_1 = \hat{B}_2$

$HD = EH \cdot BH \Rightarrow HD = \sqrt{(4,4)^2} = 4,4$
 $HD = EH \cdot BH \Rightarrow HD = \sqrt{(4,4)^2} = 4,4$
 $HD = EH \cdot BH \Rightarrow HD = \sqrt{(4,4)^2} = 4,4$
 $HD = EH \cdot BH \Rightarrow HD = \sqrt{(4,4)^2} = 4,4$

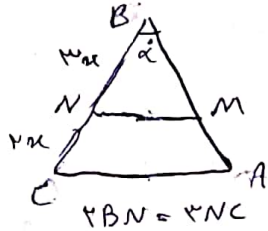


$ABC \sim \Delta H \Rightarrow AH^2 = BH \cdot BC$
 $AH^2 = BH \cdot BC$
 $AH^2 = BH \cdot BC$
 $AH^2 = BH \cdot BC$

$\Delta ABC \sim \Delta H \Rightarrow \frac{AB}{AH} = \frac{BC}{BH}$
 $\Delta ABC \sim \Delta H \Rightarrow \frac{AB}{AH} = \frac{BC}{BH}$
 $\Delta ABC \sim \Delta H \Rightarrow \frac{AB}{AH} = \frac{BC}{BH}$
 $\Delta ABC \sim \Delta H \Rightarrow \frac{AB}{AH} = \frac{BC}{BH}$

$NCD \sim \Delta ABH \Rightarrow \frac{NC}{AB} = \frac{CD}{BH}$
 $NCD \sim \Delta ABH \Rightarrow \frac{NC}{AB} = \frac{CD}{BH}$
 $NCD \sim \Delta ABH \Rightarrow \frac{NC}{AB} = \frac{CD}{BH}$
 $NCD \sim \Delta ABH \Rightarrow \frac{NC}{AB} = \frac{CD}{BH}$

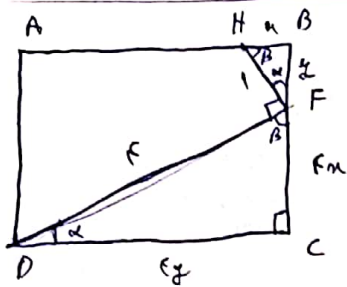
$\frac{S_{ABCD}}{S_{ABH}} = \frac{2m \cdot 2m}{m \cdot m} = 4$
 $\frac{S_{ABCD}}{S_{ABH}} = \frac{2m \cdot 2m}{m \cdot m} = 4$
 $\frac{S_{ABCD}}{S_{ABH}} = \frac{2m \cdot 2m}{m \cdot m} = 4$
 $\frac{S_{ABCD}}{S_{ABH}} = \frac{2m \cdot 2m}{m \cdot m} = 4$



$$\frac{S_{ABC}}{S_{ANM}} = \frac{\frac{1}{2} \sin \alpha \cdot BC \cdot AB}{\frac{1}{2} \sin \alpha \cdot BN \cdot BM} = \mu$$

$$\frac{BC \cdot AB}{BN \cdot BM} = \frac{a \cdot x}{\frac{a}{2} \cdot \frac{BM+MA}{BM}} = \mu \quad \frac{BM+MA}{BM} = \frac{q}{a} \quad 1 + \frac{MA}{BM} = \frac{q}{a}$$

$$\frac{MA}{MB} = \frac{f}{a} \quad \boxed{\frac{BM}{AM} = \frac{a}{f}} \quad \checkmark \quad \leftarrow$$

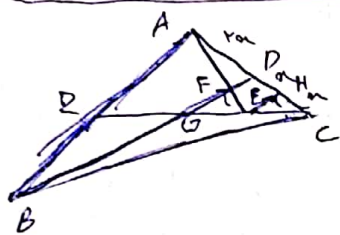


$$x^2 + y^2 = 1 \quad \sim \sim \quad \frac{14}{a} \cdot \frac{1}{a} = 1 \quad f_y = \frac{14}{a}$$

$$f_m + y = f_y \quad \frac{10}{a} \cdot \frac{1}{a} = 1 \quad f_y \sim \sim \quad (f_y)^2 = \left(\frac{14}{a}\right)^2 = \frac{196}{a^2}$$

$$f_y = f_m \quad \frac{a}{y} \cdot \frac{1}{a} = 1 \quad \sim \sim \quad \frac{a}{y} = 1 \quad \sim \sim \quad y = \frac{a}{2} \quad f = \frac{a}{2}$$

$$y = \frac{f}{r} \cdot a \quad \boxed{\frac{196}{a^2}} \quad \checkmark$$



$$\frac{BD}{FD} ? \quad AE, EH \parallel BD \sim \sim \quad BD \sim \sim \quad AD = DC$$

$$GE = EC \quad \frac{BD}{FD} ? \quad \frac{BD}{FD} = \frac{AD}{AH} = \frac{1}{2} = \frac{1}{2}$$

$$HE \parallel BD \xrightarrow{AEC} \frac{FD}{EH} = \frac{AD}{AH} = \frac{1}{2} = \frac{1}{2}$$

$$HE \parallel BD \xrightarrow{GED} \frac{EH}{GD} = \frac{CH}{CD} = \frac{1}{2} = \frac{1}{2}$$

$$\frac{GD}{BG} = \frac{1}{2} \quad \frac{EH}{BD} = \frac{1}{2} \quad \frac{FD}{BD} = \frac{FD}{EH} \times \frac{EH}{BD} = \frac{1}{2}$$

$$\frac{1}{2} \times \frac{1}{2} = \frac{1}{4} \quad \boxed{\frac{BD}{FD} = 4} \quad \checkmark$$