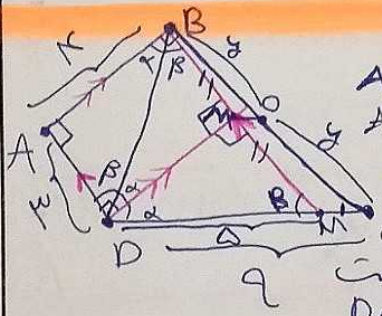


۱  
 DH ارتفاع  $\triangle BEC$ ، فاصلی سین روخا  
 DE و BE است و فاصلی دو خط عمودی  
 همواره است پس  $BD' = DH$   
 سه ضلع  $\triangle BDE$  و  $\triangle BEC$  هم ارتفاع  
 (نظر به نسبت قائمه های نظیر این ارتفاع  
 ها برابر است اوهم)

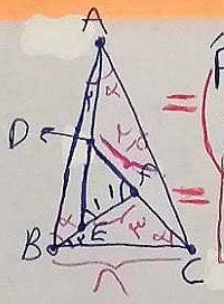
$DE \parallel BC \xrightarrow{\text{مقیاس}} \frac{AB}{AD} = \frac{BC}{DE} = \frac{12}{8}$



$AB \parallel DM$   
 $AB \perp AD$   
 $AD \parallel BM$   
 $AD \perp AB$   
 $DM \perp AD$   
 $BM \perp AB$   
 سه ضلع  $\triangle ABD$  و  $\triangle BMD$  (نظر به نسبت قائم)  
 $DM = 2$  و  $BM = 2$

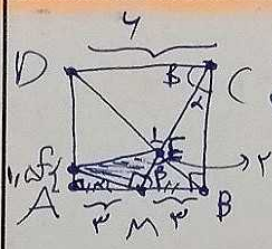
$\triangle DBM \cong \triangle DM'B \rightarrow MM' = MB$   
 نیزه  
 $BM = 2$  و  $MM' = 2$   
 $BO = 2$  و  $OC = 2$   
 $BN$  و  $MC$  سه ضلع  
 $\triangle BNC$  و  $\triangle MNC$  سه ضلع  
 $MO \parallel NC$   
 $\rightarrow MO = \frac{1}{2} NC \rightarrow NC = DC = DN$

$DM = 2$  و  $DB = 2$   
 $MO = 2$   
 $NC = DC = DN$   
 $9 - 8 = 1$   
 $\frac{1}{E}$



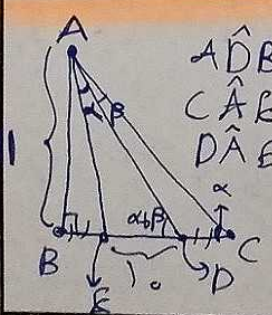
$\hat{F} = 2\alpha + \beta$   
 $\hat{E} = 2\alpha + \beta$   
 $\hat{B} = \beta + \alpha$   
 $\hat{A} = \alpha + \beta$   
 $\triangle EFD \sim \triangle ABC$

$\frac{1}{\alpha} = \frac{3}{AB} \rightarrow \frac{1}{\alpha} = \frac{3}{AB} \rightarrow AB = 3\alpha$   
 $AB = 3\alpha$



$DC \parallel MB$ ,  $CM \rightarrow \hat{DCM} = \hat{FMB}$   
 $\hat{E}_1 = \hat{E}_2$   
 $MC = ME + EC$   
 $\frac{1}{\alpha} = \frac{3}{AB} \rightarrow \frac{1}{\alpha} = \frac{3}{AB} \rightarrow AB = 3\alpha$   
 $AB = 3\alpha$

$\triangle DCE \sim \triangle MEB \rightarrow \frac{ME}{EC} = \frac{MB}{BC}$   
 $\frac{ME}{EC} = \frac{3}{4}$   
 $ME = 3$  و  $EC = 4$   
 $ME = EC$



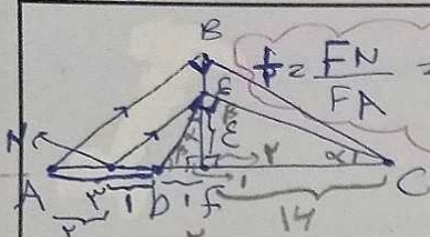
$\hat{ADB} = 2\alpha + \beta$   
 $\hat{CAE} = 2\alpha + \beta$   
 $\hat{DAE} = 2\alpha + \beta$   
 $\triangle AED \sim \triangle ACF$   
 $\frac{1}{\alpha} = \frac{3}{AB} \rightarrow \frac{1}{\alpha} = \frac{3}{AB} \rightarrow AB = 3\alpha$   
 $AB = 3\alpha$

$\frac{1}{\alpha} = \frac{3}{AB} \rightarrow \frac{1}{\alpha} = \frac{3}{AB} \rightarrow AB = 3\alpha$   
 $AB = 3\alpha$   
 $CD = 1$  و  $AD = 2$   
 $CD = 1$  و  $AD = 2$   
 $CD = 1$  و  $AD = 2$   
 $CD = 1$  و  $AD = 2$



$BE = 2\sqrt{5}$

$$BC^2 = AC^2 - AB^2 \rightarrow BC^2 = 25 - 10 = 15 \rightarrow BC = \sqrt{15}$$



$$\frac{FN}{FA} = \frac{FE}{FB} \xrightarrow{\text{cross}} NE \parallel AB \rightarrow \angle NE = \angle AB$$

$$AB = 2\sqrt{5}$$

$$NE^2 = NF^2 + FE^2 \rightarrow NE^2 = 1 + 14 \rightarrow NE = \sqrt{15}$$

بالنسبة E وسط AF من N وصل من N

$$(EF)^2 = DF \times FC \rightarrow 14 = 1 \times FC \rightarrow FC = 14$$

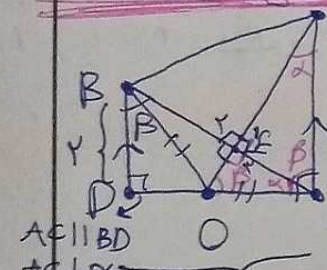
$$(BF)^2 = \frac{AF \times FC}{E} \rightarrow BF = 1$$

مساحة الزاوية مستوية السطح يكون ميلها مستوية



$$(E\sqrt{2})^2 + (1\sqrt{2})^2 = (2\sqrt{2})^2$$

$$2 + 2 = 8$$

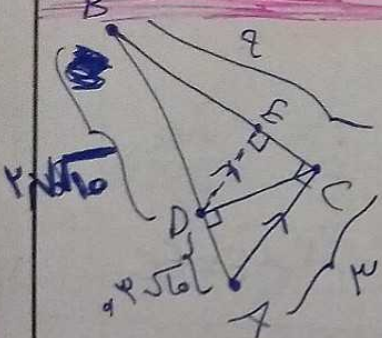


$$\triangle BOC \rightarrow OE \rightarrow EC = BE \quad (1)$$

$$\triangle AEC \cong \triangle AEB \rightarrow \angle AEC = \angle AEB$$

$$\triangle BED \sim \triangle EOC \rightarrow \frac{DE}{EC} = \frac{1}{\sqrt{5}} \rightarrow DE = \frac{\sqrt{5}}{5}$$

$$\triangle OCA \rightarrow \frac{OE}{\sqrt{5}} = \frac{EA}{\sqrt{5}} \rightarrow EA = OE$$



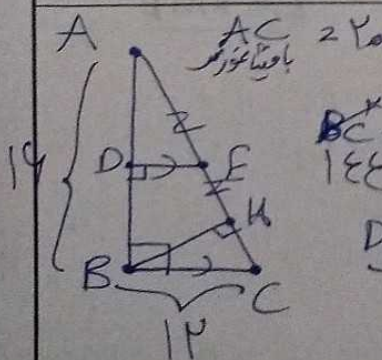
$$AB^2 = 9 + 11 \rightarrow AB = \sqrt{20}$$

$$\frac{AC^2}{9} = \frac{AD \times AB}{\sqrt{5}} \rightarrow AD = \frac{1}{\sqrt{5}}$$

$$BD = 2\sqrt{5}$$

$$DE \parallel AC \xrightarrow{\text{cross}} \frac{BD}{DA} = \frac{BE}{EC}$$

$$11 - 9x = 9x \rightarrow 11 = 18x \rightarrow x = \frac{11}{18}$$



$$BC = HC \times AC \rightarrow HC = \frac{1}{\sqrt{5}} \rightarrow AH = 6 - \frac{1}{\sqrt{5}} \rightarrow EH = AE$$

$$DE \parallel BC \xrightarrow{\text{cross}} \frac{AE}{AC} = \frac{DE}{BC} \rightarrow \frac{4/5}{\sqrt{5}} = \frac{2x}{14} \rightarrow x = \frac{14}{5\sqrt{5}}$$