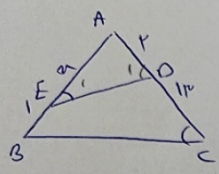


$$BE^2 = 1^2 + m^2 \rightarrow BE = \sqrt{1+m^2}$$

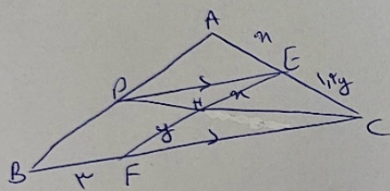
$$\frac{AE}{BE} = \frac{EF}{BF} = \frac{EF}{BE} = \frac{1}{\sqrt{1+m^2}} \rightarrow EF = \frac{\sqrt{1+m^2}}{\sqrt{1+m^2}} = \frac{1}{\sqrt{1+m^2}}$$

$$(1+m)^2 = AC^2 \rightarrow AC = \sqrt{1+m^2} \quad \frac{1}{\sqrt{1+m^2}} = \frac{AF}{FE} \rightarrow \frac{1}{\sqrt{1+m^2}} = \frac{AF}{\frac{1}{\sqrt{1+m^2}}} \rightarrow AF = \frac{1}{1+m}$$



$$\hat{A} = \hat{A} \quad \hat{E} = \hat{E} \quad \hat{D} = \hat{D} \rightarrow \triangle ADE \sim \triangle ABC \rightarrow \frac{AD}{AB} = \frac{AE}{AC}$$

$$\frac{1}{n+1} = \frac{m}{1+m} \rightarrow m^2 + m - 1 = 0 \quad m = \frac{-1 \pm \sqrt{5}}{2}$$

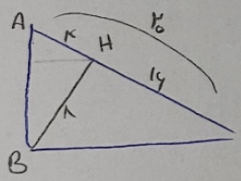


$$y = \frac{1}{x} \quad BC = ? \quad y = \frac{1}{x} \rightarrow x = \frac{1}{y}$$

$$\frac{DE}{BC} = \frac{m}{1+y+m} = \frac{1}{y} = \frac{DE}{1+y+m} \rightarrow DE = \frac{1}{1+y+m}$$

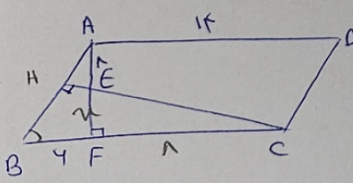
$$\frac{DE}{FC} = \frac{m}{y} = \frac{1}{y} = \frac{DE}{FC} \rightarrow FC = \frac{1}{y} = DE$$

$$BC = \frac{1}{y} + \frac{1}{y} = \frac{2}{y} \quad FC = \frac{1}{y} \times \frac{1}{y} = \frac{1}{y^2} \quad DE = \frac{1}{y}$$



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

$$BH^2 = CH^2 \rightarrow BH = CH$$



$$AF = ?$$

$$\hat{A} = \hat{A} \quad \hat{F} = \hat{F} \quad \hat{B} = \hat{B} \rightarrow \triangle AFB \sim \triangle CHB \rightarrow \frac{AF}{CH} = \frac{FB}{HB} = \frac{AB}{CB}$$

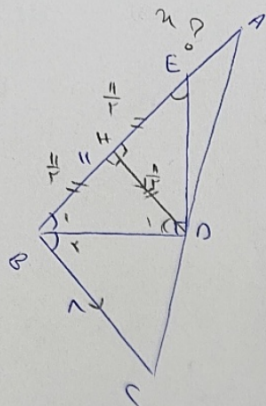
$$\hat{F} = \hat{F} \quad \hat{C} = \hat{C} \quad \hat{B} = \hat{B} \rightarrow \triangle CFE \sim \triangle CHB \rightarrow \frac{CF}{CH} = \frac{CE}{CB} = \frac{1}{1}$$

$$\frac{1}{CH} = \frac{CH \times 1}{1+m}$$

$$\frac{CH}{1} = \frac{BH}{m}$$

$$\frac{1}{1} = \frac{1}{m(1+m)}$$

$$m^2 + m - 1 = 0 \quad (m+1)(m-1) = 0 \rightarrow m = 1 \rightarrow AF = 1+1 = 2$$



$$\hat{D}_1 = \hat{B}_1 \rightarrow \hat{D}_1 + \hat{B}_1 = 90^\circ \rightarrow \hat{D}_1 = \hat{B}_1 = \hat{E} \hat{D} \hat{C} = \hat{B}_1$$

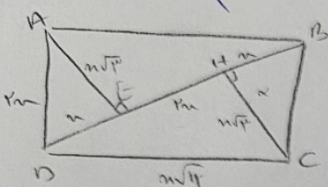
$$\frac{DH}{DC} = \frac{AH}{AB} = \frac{11}{14} = \frac{11}{14}$$

$$11m + 11 = 14m + 11$$

$$2m = 17$$

$$m = \frac{17}{2} = 8.5$$

5



$$AE^2 = m \times 17m = 17m^2 \rightarrow AE = m\sqrt{17}$$

$$AD^2 = 17m^2 + m^2 = 18m^2 \rightarrow AD = m\sqrt{18}$$

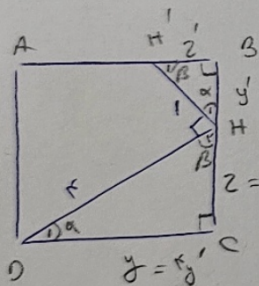
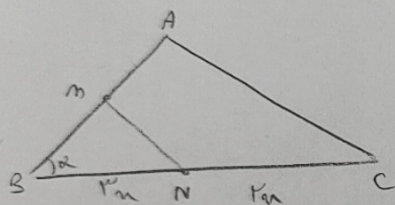
$$DC^2 = 9m^2 + 17m^2 = 26m^2 \rightarrow DC = m\sqrt{26}$$

$$\frac{S_{BHC}}{S_{ABCO}} = \frac{11 \times 17}{14 \times 11} = \frac{17}{14}$$

$$\rightarrow \frac{S_{ABCO}}{S_{ABCO}} = 1$$

$$\frac{S_{AMN}}{S_{ABC}} = \frac{\frac{1}{2} \times 17m \times 17m \times \sin \alpha}{\frac{1}{2} \times 14 \times 17m \times \sin \alpha} = \frac{1}{14} = \frac{BM}{AB} = \frac{1}{14} \times \frac{14}{17} = \frac{1}{17}$$

$$\frac{BM}{AB - BM} = \frac{1}{17} = \frac{BM}{AM}$$



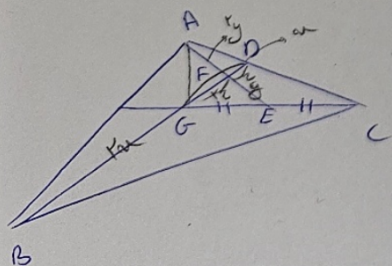
$$\alpha + \beta + 90^\circ = 180^\circ \rightarrow \alpha + \beta = 90^\circ$$

$$\left\{ \begin{array}{l} \hat{H}_1 = \hat{D}_1 \\ \hat{H}_1 = \hat{B}_1 \\ \hat{B} = \hat{C} = 90^\circ \end{array} \right\} \rightarrow \triangle DCH \sim \triangle BH_1 \rightarrow \frac{DH}{CH} = \frac{BH}{CH} = \frac{BH}{CH}$$

$$BC = DC = \sqrt{y'^2 + z'^2} \rightarrow y' = \frac{1}{2} z'$$

$$(2) (y')^2 = 1 \rightarrow z'^2 + \frac{1}{4} z'^2 = \frac{17}{4} z'^2 = 1 \rightarrow z' = \frac{2}{\sqrt{17}} \rightarrow y' = \frac{1}{\sqrt{17}} \rightarrow y = \frac{17}{17}$$

$$S = \frac{1}{2} \times \frac{17}{17} = \frac{17}{34}$$



$$17z + z = 18 = 17z$$

$$\Rightarrow BG = 17m = 17$$

المثلثات المتشابهة (المثلثات المتشابهة) هي التي يكون لها نفس الشكل ولكن قد تختلف في الحجم.

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$$\frac{BD}{FD} = \frac{92}{2} = 46$$

5