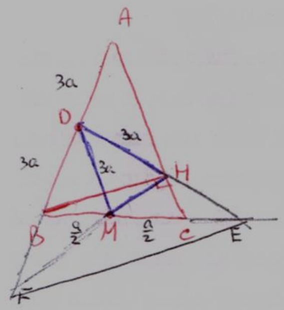
1.10
5

... $C = 1:2$



1c. DM קטע אמצעים ב $\triangle ABC$ $\Leftarrow$ $DM \parallel AC$

$\Leftarrow$ $\measuredangle A = \measuredangle BDM$, $\measuredangle C = \measuredangle BMD$ $\Leftarrow$ $\triangle ABC \sim \triangle DBM$

יחס הדמיון $1:2$

MH תיכון ליתר ב $\triangle BHC$ $\Leftarrow$ $MH = \frac{1}{2} MC$

נסמן $\measuredangle C = \alpha = \measuredangle DMB$ $\Rightarrow$ $\measuredangle HMC = 180 - 2\alpha$

$\measuredangle DMH = \alpha$

$\triangle ABC \sim \triangle DHM$ (צ.ז.צ) $\Leftarrow$ יחס הדמיון $1:2$.

$\measuredangle MHC = \measuredangle C = \measuredangle B$ $\Leftarrow$ $\triangle MHC \sim \triangle ABC$ (ז.ז) יחס הדמיון

$\frac{\frac{a}{2}}{6a} = \frac{1}{12}$

2.

$\measuredangle DHA = \measuredangle A = 180 - 2\alpha \rightarrow \measuredangle ABH = 2\alpha - 90$

$\measuredangle DHA = \measuredangle CHE$

$\measuredangle HBC = 90 - \alpha$

$\measuredangle DHB = 90 - (180 - 2\alpha) = 2\alpha - 90$

$\measuredangle HBF = 180 - \measuredangle ABH = 180 - (2\alpha - 90) = 270 - 2\alpha$

$\measuredangle BHE = \measuredangle BHC + \measuredangle CHE = 90 + 180 - 2\alpha = 270 - 2\alpha$

(ז.צ.ז) $\triangle BHE \cong \triangle HBF \rightarrow FH = BE$, $BF = HE$

$\frac{DB}{BF} = \frac{3a}{BF} = \frac{3a}{HE} = \frac{DH}{HE} \xRightarrow[\text{תאלס}]{\text{הפוך}} BH \parallel FE$

ולכן $BHEF$ טרפז ש״ש