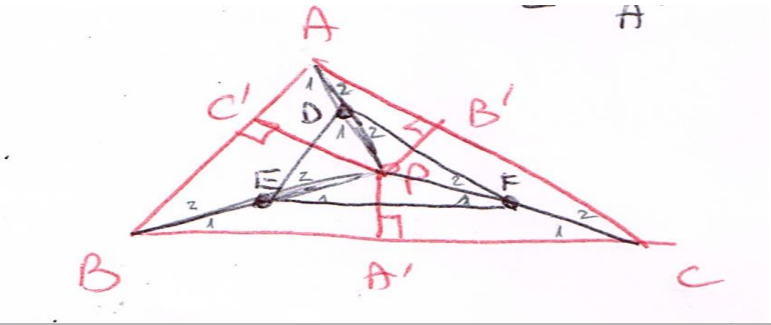
1.7
3



א.

$\sphericalangle C' + \sphericalangle B' = 180°$ סכום כיוונים עוקבות – $PB'AC'$.

$\sphericalangle C' + \sphericalangle A' = 180°$ " " – $PC'BA'$

$\sphericalangle B' + \sphericalangle A' = 180°$ " " – $PCA'B'$.

ב. $\triangle BPC$ – אמצעים – EF

$\triangle APC$ – " " – DF

$\triangle APB$ – " " – DE

$\Rightarrow EF \parallel BC \rightarrow \sphericalangle B_1 = \sphericalangle E_1$ (מתוואר) $\sphericalangle F_1 = \sphericalangle C_1$

$\Rightarrow DF \parallel AC \rightarrow \sphericalangle F_2 = \sphericalangle C_2$ (מתוואר) $\sphericalangle A_2 = \sphericalangle D_2$

$\Rightarrow DE \parallel AB \rightarrow \sphericalangle D_1 = \sphericalangle A_1$ (מתוואר) $\sphericalangle B_2 = \sphericalangle E_2$

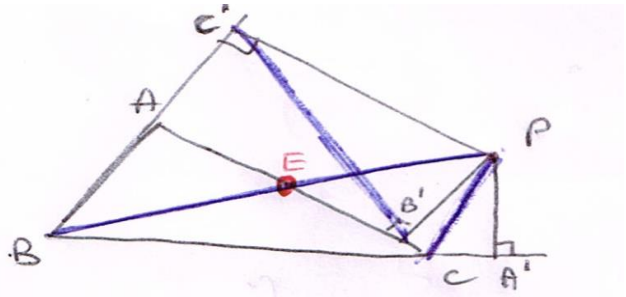
$\sphericalangle B = \sphericalangle B_1 + \sphericalangle B_2 = \sphericalangle E_1 + \sphericalangle E_2 = \sphericalangle E$

$\sphericalangle C = \sphericalangle C_1 + \sphericalangle C_2 = \sphericalangle F_1 + \sphericalangle F_2 = \sphericalangle F$

$\sphericalangle A = \sphericalangle A_1 + \sphericalangle A_2 = \sphericalangle D_1 + \sphericalangle D_2 = \sphericalangle D$

ומכאן הדמיון הנ"ל 2:1.

ג.



E אמצע BB' ואמצע AP.

לכן $BAPB'$ הוא מקבילית שאלכסוניו

חוצים זה את זה $\Leftarrow$ מקבילית.