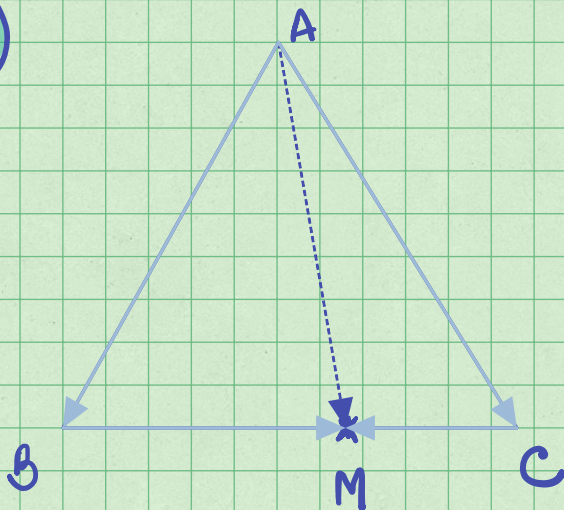


Lista 1

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$$3 \vec{BM} = 7 \vec{MC} \quad \therefore \vec{BM} \parallel \vec{MC}$$

$$\vec{BM} = \frac{7}{3} \vec{MC}$$

$$\vec{AM} \rightarrow \alpha \begin{cases} \vec{AB} \\ \vec{AC} \end{cases}$$

$$\therefore \vec{AM} = \alpha \vec{AB} + \beta \vec{AC}$$

$\alpha, \beta ?$

triângulo ABM: $\vec{AM} = \vec{AB} + \vec{BM} \quad (1)$

triângulo ACM: $\vec{AM} = \vec{AC} + \vec{CM} \quad (2)$

$$(1) + (2): \quad 2\vec{AM} = \vec{AB} + \vec{BM} + \vec{AC} + \vec{CM}$$

$$2\vec{AM} = \vec{AB} + \vec{AC} + \vec{BM} - \vec{MC}$$

Se $\vec{BM} = \frac{7}{3} \vec{MC}$ então $\vec{MC} = \frac{3}{7} \vec{BM}$

$$\therefore 2\vec{AM} = \vec{AB} + \vec{AC} + \vec{BM} - \frac{3}{7} \vec{BM}$$

$$2\vec{AM} = \vec{AB} + \vec{AC} + \frac{4}{7} \vec{BM}$$

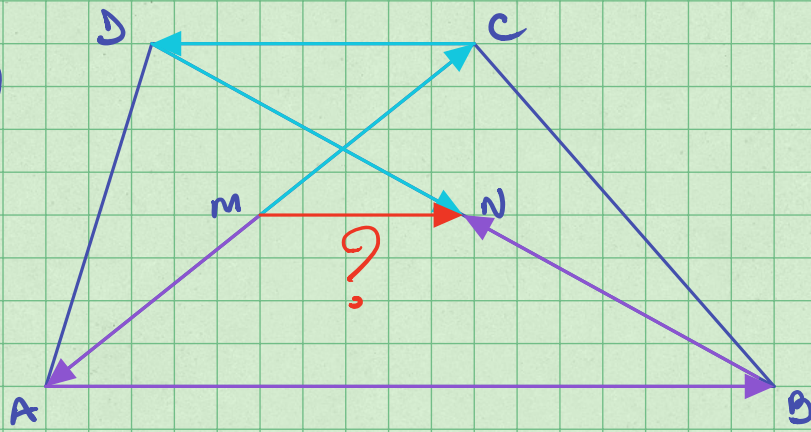
mas de (1): $\vec{BM} = \vec{AM} - \vec{AB}$

Logo: $2\vec{AM} = \vec{AB} + \vec{AC} + \frac{4}{7} (\vec{AM} - \vec{AB})$

$$2\vec{AM} - \frac{4}{7} \vec{AM} = \vec{AB} - \frac{4}{7} \vec{AB} + \vec{AC}$$

$$\frac{10}{7} \vec{AM} = \vec{AB} + \frac{3}{7} \vec{AC} \quad \rightarrow \quad \vec{AM} = \frac{7}{10} \vec{AB} + \frac{3}{10} \vec{AC}$$

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$$\vec{MN} = \vec{MA} + \vec{AB} + \vec{BN} \quad (+)$$
$$\vec{MN} = \vec{MC} + \vec{CD} + \vec{DN} \quad (+)$$

$$2\vec{MN} = \underbrace{\vec{MA} + \vec{MC}}_{=\vec{0}} + \vec{AB} + \vec{CD} + \underbrace{\vec{BN} + \vec{DN}}_{=\vec{0}}$$

$$2\vec{MN} = \vec{AB} + \vec{CD}$$

⋮

Slides - Vetores no Espaço

5) Simétricos de um ponto em relação a outro:

