

Zadatak 8. Neka su M , N i P polovišta stranica \overline{BC} , \overline{AC} i \overline{AB} trokuta ABC . Prikaži vektore \overrightarrow{AM} , \overrightarrow{BN} i \overrightarrow{CP} kao linearne kombinacije vektora $\overrightarrow{AB} = \vec{e}_1$ i $\overrightarrow{AC} = \vec{e}_2$.

Rješenje.

$$\begin{aligned}\overrightarrow{BC} &= \vec{e}_1 - \vec{e}_2; \\ \overrightarrow{AM} &= \overrightarrow{AB} + \overrightarrow{BM} = \vec{e}_1 + \frac{1}{2}\overrightarrow{CB} = \vec{e}_1 - \frac{1}{2}\overrightarrow{BC} = \\ &= \vec{e}_1 - \frac{1}{2}(\vec{e}_1 - \vec{e}_2) = \frac{1}{2}\vec{e}_1 + \frac{1}{2}\vec{e}_2; \\ \overrightarrow{BN} &= \overrightarrow{BA} + \overrightarrow{AN} = \frac{1}{2}\vec{e}_2 - \vec{e}_1; \\ \overrightarrow{CP} &= \overrightarrow{CA} + \overrightarrow{AP} = -\overrightarrow{AC} + \frac{1}{2}\overrightarrow{AB} = \frac{1}{2}\vec{e}_1 - \vec{e}_2.\end{aligned}$$

