Zadatak 14. Točke $A(-1, 1)$, $B(3, -2)$, $C(7, 7)$ vrhovi su trokuta $\triangle ABC$. Odredi vektor u smjeru simetrale unutarnjeg kuta pri vrhu A ovog trokuta.

Rješenje.

$A(-1, 1),$

$B(3, -2),$

$C(7, 7),$

_____

$\vec{s} = ?$

$\overrightarrow{AB} = (3 + 1)\vec{i} + (-2 - 1)\vec{j} = 4\vec{i} - 3\vec{j} = \sqrt{16 + 9} = 5$

$\vec{e_1} = \dfrac{1}{5}(4\vec{i} - 3\vec{j}) = \dfrac{4}{5}\vec{i} - \dfrac{3}{5}\vec{j}$

$\overrightarrow{AC} = (7 + 1)\vec{i} + (7 - 1)\vec{j} = 8\vec{i} + 6\vec{j}$

$|\overrightarrow{AC}| = \sqrt{64 + 36} = 10$

$\vec{e_2} = \dfrac{1}{10}(8\vec{i} + 6\vec{j}) = \dfrac{4}{5}\vec{i} + \dfrac{3}{5}\vec{j}$

$\vec{s} = k(\vec{e_1} + \vec{e_2}), \ k \in \mathbf{R}$

$\vec{s} = k\left(\dfrac{4}{5}\vec{i} - \dfrac{3}{5}\vec{j} + \dfrac{4}{5}\vec{i} + \dfrac{3}{5}\vec{j}\right) = \dfrac{8}{5}k\vec{i}$