

Zadatak 20. Odredi jedinični vektor okomit na vektor \vec{AB} ako je $A(-2, 3)$, $B(-4, 2)$.

Rješenje.

$$\vec{AB} = (-4 + 2)\vec{i} + (2 - 3)\vec{j} = -2\vec{i} - \vec{j}$$

$$\vec{e} \cdot \vec{AB} = 0$$

$$e_x \cdot (-2) + e_y \cdot (-1) = 0$$

$$-2e_x - e_y = 0$$

$$e_y = -2e_x$$

$$\sqrt{e_x^2 + e_y^2} = 1/2$$

$$e_x^2 + (-2e_x)^2 = 1$$

$$e_x^2 + 4e_x^2 = 1$$

$$5e_x^2 = 1$$

$$e_x^2 = \frac{1}{5}$$

$$e_x = \pm \frac{1}{\sqrt{5}}$$

$$e_y = \mp \frac{2}{\sqrt{5}}$$

$$\frac{1}{\sqrt{5}}\vec{i} - \frac{2}{\sqrt{5}}\vec{j} \text{ ili } -\frac{1}{\sqrt{5}}\vec{i} + \frac{2}{\sqrt{5}}\vec{j}.$$