

Answer on Question #42422 – Math – Analytic Geometry

1. Let $u = \langle 4, 3 \rangle$. Find the unit vector in the direction of u , and write your answer in component form.

Solution.

The module of the vector $\vec{u}(4;3)$ is $\left| \vec{u} \right| = \sqrt{4^2 + 3^2} = 5$.

The unit vector in the direction of u is $\vec{n} = \frac{\vec{u}}{\left| \vec{u} \right|}$. The module of this vector equals to 1, and the

direction is the same as the direction of the vector \vec{u} .

Let write the unit vector in component form: $\vec{n} = \frac{1}{5}(4;3) = \left(\frac{4}{5}, \frac{3}{5} \right)$.

Answer: $\left(\frac{4}{5}, \frac{3}{5} \right)$.