Answer on Question #49231 – Engineering – Other

A vector a of magnitude 8 units has two components. One is perpendicular to a of magnitude 6 units. What is the magnitude of the other component?

Solution:
$|\vec{a}| = 8 \, unit - magnitude \, of \, the \, vector;$
$a_1 = 6 - first \, component \, of \, the \, fecto⬚$
$a_2 - second \, component \, of \, the \, fecto⬚;$

Using Pythagorean theorem:
$$|u_2|^2 = |u|^2 + u_2^2$$
$$u_2 = \sqrt{|u|^2 + u_1^2} = \sqrt{8^2 + 6^2} = 10$$
Answer: second component of the vector is equal to 10.