

Math 1613 - Trigonometry
Quiz #23 - 2011.11.08
Solutions

1. Which two of the following three vectors are perpendicular?

$$\vec{u} = \langle 4, -3 \rangle, \quad \vec{v} = \langle 2, 6 \rangle, \quad \vec{w} = \langle -9, 3 \rangle$$

Notice that $\vec{v} \cdot \vec{w} = 2(-9) + 6(3) = 0$, thus $\vec{v} \perp \vec{w}$

2. Compute the magnitude of each of the vectors from problem 1.

$$|\vec{u}| = \sqrt{4^2 + (-3)^2} = 5$$

$$|\vec{v}| = \sqrt{2^2 + 6^2} = 2\sqrt{10}$$

$$|\vec{w}| = \sqrt{(-9)^2 + 3^2} = 3\sqrt{10}$$