

Quiz 7

Math 1060-5

Friday, November 9, 2012

Name: _____

Directions: Show all work for full credit. Clearly indicate all answers. Simplify all mathematical expressions completely. No calculators are allowed.

Formulas

Law of Cosines:

$$a^2 = b^2 + c^2 - 2bc \cos A$$

$$\|\mathbf{v}\| = \sqrt{v_1^2 + v_2^2}$$

$$b^2 = a^2 + c^2 - 2ac \cos B$$

$$c^2 = a^2 + b^2 - 2ab \cos C$$

1. Find angle A in the triangle with sides $a = \sqrt{13}$, $b = 3$, and $c = 4$. If necessary, leave the angle in terms of an inverse trigonometric function. (20 points)

2. Find the component form and magnitude of the vector with the initial point $(1, 6)$ and terminal point $(-2, 2)$. (10 points)

3. Carry out each of the following operations: (10 points each)

(a) $\langle 2, 1 \rangle + \langle 1, 3 \rangle$

(b) $2\langle 2, 1 \rangle - 3\langle 1, 3 \rangle$