Mat 397 Spring 2016 Quiz 1 Name: _____ **Score:** ___/10

1. Let $\bar{u} = \langle 2,3,-1 \rangle$ and $\bar{v} = \langle 4,1,3 \rangle$

(a) $|\bar{u}| =$ _____

(b) Compute the dot product $\bar{u} \bullet \bar{v} =$ _____

(c) Find the angle between Let $\bar{u}$ and $\bar{v}$. (**Note:** Since you are not using a calculator, you will not be able to get a numerical approximation!)

2. Let $\bar{a}$, $\bar{b}$ and $\bar{c}$ be vectors with $\bar{a} \bullet \bar{b} = 2$ and $\bar{a} \bullet \bar{c} = 7$.

(a) $\bar{a} \bullet (\bar{b} + 3\bar{c}) =$

(b) For what value of k is $k\bar{b} + \bar{c}$ perpendicular to $\bar{a}$?