

Graded by: _____

Score: _____

ID: _____

WORKSHEET 1 - DUE 9/9

MATH 2110Q – Fall 2015

Professor Hohn

You must show all of your work to receive full credit!

1. Find a vector \vec{a} with representation given by the directed line segment \overrightarrow{AB} where $A(0, 3, 1)$ and $B(2, 3, -1)$. Draw \overrightarrow{AB} and the equivalent representation starting at the origin.

2. Let $\vec{a} = 2\hat{x} - 4\hat{y} + 4\hat{z}$ and $\vec{b} = 2\hat{y} - \hat{z}$. Compute

(a) $\vec{a} + \vec{b}$

(b) $2\vec{a} + 3\vec{b}$

(c) $\|\vec{a}\|$

(d) $\|\vec{a} - \vec{b}\|$

3. Let $\vec{v} = \langle -4, 2, 2 \rangle$.

(a) Find a unit vector that has the same direction as \vec{v} .

(b) Find a vector that has the same direction as \vec{v} , but has length 6.

4. APPLICATION QUESTION

A quarterback throws a football with angle of elevation 40° and speed 60 ft/s. Find the horizontal and vertical components of the velocity vector.