Name: _____

Math 253 Calculus III (Bueler) Wednesday 24 January 2018

Quiz #1

In class. 25 minutes. No textbook or notes or calculator. 30 points total.

1. (*6 pts*) Sketch the points $(1, 5, 3)$ and $(0, 2, -3)$ on a single set of coordinate axes. (*Be sure to label each axis.*)

2. (*6 pts*) Write an inequality or inequalities to describe the solid upper hemisphere of radius 2 centered at the origin.

3. (*6 pts*) Find the sum of the given vectors and illustrate geometrically:

$\mathbf{a} = \langle 3, -1 \rangle$, $\mathbf{b} = \langle -2, 4 \rangle$

4. **(a)** (*6 pts*) Find the length of the vector $\mathbf{v} = -6\mathbf{i} + 3\mathbf{j} + 2\mathbf{k}$.

(b) (*6 pts*) Find a unit vector in the same direction as the vector $\mathbf{v}$ in part **(a)**.