Math 208 Quiz 1

Name:_____ PIN(in any 4 digits):_____ Score:_____

Instructions: You must show supporting work to receive full and partial credits. No text book, notes, formula sheets allowed.

1. (*2*) Find the distance between two points $A(0,1,-1), B(3,2,-1)$.
   $\sqrt{10}$
2. (*2*) Find a vector perpendicular to $\langle 1,1,1\rangle$.
   Solve for $\vec{v} = \langle a,b,c\rangle$ so that $\vec{v}\cdot\langle 1,1,1\rangle = a+b+c+0$ to get, e.g., $\langle 1,-1,0\rangle$
3. (*4*) Find the component of vector $\mathbf{a} = \langle 1,3,2\rangle$ in vector $\vec{b} = \langle -1,0,1\rangle$, $\mathbf{comp}_{\vec{b}}\vec{a}$.
   $\frac{1}{\sqrt{2}}$
4. (*4*) Find the angle between $\langle 1,2,3\rangle$ and $\langle 3,2,1\rangle$.
   $\cos^{-1}\frac{10}{14} = 0.775$.
5. (*4*) Find a set of parametric equations for the line through two points $(0,-1,0)$ and $(1,1,1)$.

$$\begin{cases} x = t \\ y = -1+2t \\ z = t \end{cases}$$

6. (*4*) Find the area of the triangle with vertexes $P(0,1,2), Q(1,2,3), R(2,3,4)$.
   $\frac{1}{2}\|\vec{PQ}\times\vec{PR}\| = 0$

END