Math 251 Quiz 5

1. Find the equation of the plane passing through the point $(1,-2,3)$ with normal $< 3,2,1 >$. Locate and plot the intercepts, and use that information to sketch the plane in the positive octant where x,y,z are all nonnegative.

2. Find the equation of the line passing through the points $(1,2,-1)$ and $(2,1,1)$. Find the point of intersection of this line with the plane $2x - y + z = 4$.

3. Find the distance from the point $(-2,1,1)$ to the plane $x - 2y + 2z = 1$. (Note: The formula works fine here.)

4. Find the point on the line $\vec{r} =< -1,1,2 > +t < 1,1,-1 >$ that is closest to the pont $(0,0,0)$.

5. Find the equation of the plane that contains the points $(1,1,-1)$, $(1,2,1)$, $(-1,1,2)$.