Math 254 CLASS EXERCISES **12 April 2018**

1. The equation of a plane is $3x - y + 2z = 7$.

   (a) Give three points in the plane.

   (b) Give a vector "in the plane."

2. Give three points on the line with vector equation

$$\vec{\mathbf{x}} = \langle 1, -5, 2 \rangle + t\langle -6, 2, -4 \rangle$$

3. How are the plane and line from the above two exercises related, geometrically?

Assignment, due at the start of class on Friday, April 13th

For each set of parametric equations 1 through 6 of Assignment 2, do each of the following:

(a) Determine the rectangular equation. **Provide work showing how this is done, and box your final answer. Simplify when possible!**

(b) Give the position, velocity and acceleration vectors $\vec{\mathbf{r}}\,(t)$, $\vec{\mathbf{v}}\,(t)$ and $\vec{\mathbf{a}}\,(t)$.

(c) Determine the speed (show some work) $\|\,\vec{\mathbf{v}}\,(t)\,\|$. Note that it is a scalar quantity!

If I have to cancel class again Friday, turn in the assigment by putting it in the folder that say "Assignments for Waterman," next to my office door (Boivin 192) by 3:00 PM. In that event, look for an e-mail with something to look at over the weekend.