Math 226/229 – Quiz

Name _____

- **Write as neatly as you can!**
- **No calculators are allowed.**
- **You must show your work to obtain full credit.**

1. (*5 points*)

   (a) Find a vector $\vec{v}$ of the form $\langle c, 2c, c-1\rangle$ (for some constant c) such that $\vec{v}\cdot\langle 3,2,1\rangle = 15$

   (b) Find the vector projection of $\vec{v}$ onto the vector $\langle -2,1,2\rangle$

2. (*5 points*)

   (a) Two forces $\overrightarrow{F}$ and $\overrightarrow{G}$ act on a wagon. $\overrightarrow{F}$ has magnitude 4 N and acts at an angle of 60° from the **negative** x-axis. $\overrightarrow{G}$ has magnitude $2\sqrt{2}$ N and acts at an angle of 45° from the **postive** x-axis. Find the vector components of the net force.

   (b) If this wagon is pulled 500 meters in the **positive** x-direction by this net force, find the total work done by the net force on the wagon.