Math2210 Quiz 2 (Sections 11.2, 11.3) Summer, 2008 Dylan Zwick

Name _____ Date _____

Instructions: Please show all of your work as partial credit will be given where appropriate, **and** there may be no credit given for problems where there is no work shown. All answers should be completely simplified, unless otherwise stated.

1. Force $\boldsymbol{u}$ has a magnitude of 50 pounds and a direction of N $\frac{\pi}{4}$ W. Force $\boldsymbol{v}$ has a magnitude of 50 pounds and a direction of N $\frac{\pi}{4}$ E. Find the magnitude and direction (geometrically) of the force $\boldsymbol{w}$ needed to counterbalance $\boldsymbol{u}$ and $\boldsymbol{v}$. (Just write answers in as simplified a form as you can without a calculator.)

magnitude of $\boldsymbol{w}$: _____

direction of $\boldsymbol{w}$: _____

2. For $\boldsymbol{u}=\langle -1,3,2\rangle$ and $\boldsymbol{v}=4\boldsymbol{i}+5\boldsymbol{j}-2\boldsymbol{k}$,
   (a) find $\boldsymbol{u}-3\boldsymbol{v}$.

$\boldsymbol{u}-3\boldsymbol{v}$ = _____

   (b) find $\hat{\boldsymbol{u}}$.

$\hat{\boldsymbol{u}}$ = _____

3. Find the projection of <1, 5, -4> onto the vector <2, 0, -1>

projection: _____

4. Circle all of the following statements that do not make sense.

(a) $\boldsymbol{u}\cdot(\boldsymbol{v}+\boldsymbol{w})$

(b) $|\boldsymbol{u}|\cdot(\boldsymbol{v}+\boldsymbol{w})$

(c) $(\boldsymbol{u}\cdot\boldsymbol{v})|\boldsymbol{w}|$

(d) $(\boldsymbol{u}+\boldsymbol{v})\boldsymbol{w}$