Math2210 Quiz 2 (Sections 11.2, 11.3) Summer, 2010 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 30 pounds in the North direction. Force $\boldsymbol{v}$ has a magnitude of 40 pounds in the East direction. 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 $\boldsymbol{u}=\langle -2,5,1\rangle$ and $\boldsymbol{v}=3\boldsymbol{i}+1\boldsymbol{j}-5\boldsymbol{k}$,

   (a) find $\boldsymbol{u}+2\boldsymbol{v}$.

$\boldsymbol{u}+2\boldsymbol{v}$ = _____

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

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

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

projection: _____

4. Circle all of the following statements that make sense.

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

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

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

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