

Math 181
Fall, 2008

Name _____

Homework #18
Due Wednesday, November 26
No late papers accepted! No excuses!

1. Find two unit vectors that are orthogonal to both $\mathbf{j} + 2\mathbf{k}$ and $\mathbf{i} - 2\mathbf{j} + 3\mathbf{k}$.

2. Calculate the given quantity if $\vec{a} = \vec{i} + \vec{j} - 2\vec{k}$; $\vec{b} = 3\vec{i} - 2\vec{j} + \vec{k}$; $\vec{c} = \vec{j} - 5\vec{k}$.

a) $2\vec{a} + 3\vec{b}$

b) $|\vec{b}|$

c) $\vec{a} \cdot \vec{b}$

d) $\vec{a} \times \vec{b}$

e) $|\vec{b} \times \vec{c}|$

f) $\vec{a} \cdot (\vec{b} \times \vec{c})$

g) $\vec{a} \times (\vec{b} \times \vec{c})$

h) $proj_{\vec{a}} \vec{b}$

i) $comp_{\vec{a}} \vec{b}$

j) angle between **a** and **b**