

MTHU 242

April 13, 2007

Quiz #12

Professor Gilmore

20 Minutes

Name: \_\_\_\_\_.

**Show All of Your Work**

- (1) Find the dot product of the two vectors  $\vec{V} = (-1, 3, -2)$  and  $\vec{W} = (3, -1, -2)$ .
- (2) A sailboat, using its rudder, is running due west. A wind is blowing from  $30^\circ$  north of east at a speed of 20 miles per hour. What is the component of the wind which drives the sailboat due west?
- (3) (a) Find the vector equation for the line in 3-space which goes through the two points  $P = (2, -3, 5)$  and  $Q = (-1, 2, -2)$ .
- (b) Find the parametric form of the equations for that line.