

MAC 2313  
Quiz 3  
January 28, 2010

- 1) Let  $\mathbf{u} = \langle 1, 2, 3 \rangle$  and  $\mathbf{v} = \langle -1, -2, 4 \rangle$ . Calculate  $\mathbf{u} \cdot \mathbf{v}$ ,  $\mathbf{u} \times \mathbf{v}$ , and the angle between  $\mathbf{u}$  and  $\mathbf{v}$ .
- 2) Find the equation of the plane that passes through the points  $(1, 2, 0)$ ,  $(3, 5, 2)$  and  $(-2, -1, -3)$ .
- 3) Determine if the following two lines intersect. If that intersect, tell me the point of intersection, and then determine if the lines are perpendicular.

$$x = 3 + 5t \quad y = 2 - 6t \quad z = 3t$$

$$x = 14 + 3s \quad y = 2s \quad z = 1 - s$$