MTH 234 Quiz 1 May 23, 2016 Name _____

(20 points total)

For problems 1 - 4: Let $\vec{v} = <3, 0, -1>, \vec{u} = <1, -2, 3>, \vec{w} = <9, 3, -1>, P_0 = (2, 0, 1)$ 1. (2 points) Which of the above vectors are orthogonal?

2. (2 point) Compute $\vec{v} \times \vec{w}$.

3. (2 points) Compute the area of the triangle generated by \vec{u} and \vec{v} .

4. (4 points) Give the equation of the plane containing P_0 and the vectors \vec{u} and \vec{w} .

5. (3 points) Find the volume of the parallelepiped generated by the vectors <1,0,1>,<0,2,0>, and <2,-1,3> .

6. (3 points) Find the distance between the point (1, -2, 5) and the plane 3y - 4z + 1 = 0.

7. (4 points) Let L be the line connecting the points (1, 3, -2) and (-1, 0, 1) and let P be the plane 3x + y - 4z = 7. Where do L and P intersect?