

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

This quiz covers: 9.4, 9.5 (lines only).

**Directions:** Complete all question and **show all applicable work.** Partial credit will be given. All questions are equally weighted.

1.) Find a vector orthogonal to the vectors  $u = \langle 1, -1, 1 \rangle$  and  $v = \langle 0, 4, 4 \rangle$ . **Bonus [1pt]:** Verify your answer is correct using the dot product. Please state your reasoning.

2.) Find the equation of the line through the point  $P(1,-3,5)$  and  $Q(2, 4, 5)$ .

3.) Find the equation of a line through the point  $P(0,3,5)$  and parallel to the line:

$$x = 3t + 4 \quad y = -3t \quad z = -3$$