Closest points and distances including skew lines

Name: _____ Date: _____

6 questions | 14 marks

1. Find the closest point on (t,0,0) to (3,4,5) and its distance. [2 marks]

2. Find the distance from (1,2,3) to x+y+z=0. [2 marks]

3. Find the foot of the perpendicular from (1,2,3) to x+y+z=0. [2 marks]

4. Find the closest points and distance between $\ell_1 = s(1, 1, 0)$ and $\ell_2 = (0, 2, 1) + t(1, 0, 1)$. [4 marks]

5. Find the distance between (s,0,0) and (t,3,4). [2 marks]

6. For line (1,0,0)+t(1,1,0) and P(0,1,2), find the closest t and distance. [2 marks]