Mat 397 Spring 2016 Quiz 2 Name: _____ **Score:** ___/10

1. (3 Points.) Are the following two lines parallel? Explain how you know.

$$L_1:\ \begin{aligned} x &= 3+t \\ y &= 1-2t \\ z &= t \end{aligned} \quad -\infty < t < \infty \quad \text{and} \quad L_2:\ \begin{aligned} x &= 5-2s \\ y &= 9+4s \\ z &= 3-2s \end{aligned} \quad -\infty < s < \infty$$

2. (a) (4 Points.) Find the point of intersect of the lines

$$L_1:\ \begin{aligned} x &= 1+2t \\ y &= 2+3t \\ z &= 4+t \end{aligned} \quad -\infty < t < \infty \quad \text{and} \quad L_2:\ \begin{aligned} x &= 6+s \\ y &= 9+s \\ z &= 3-3s \end{aligned} \quad -\infty < s < \infty$$

(b) (3 Points.) What is the angle between the two lines?