NAME: .....

Georgia Tech, 1/27/2016
Math 2551 (Sections L1 – L3)

Quiz 2

1. **[8 points]** Let L be the line in space passing through the point $(2, -3, -1)$ and parallel to the vector $\vec{v} = 2\vec{i} + 4\vec{j} + 5\vec{k}$.

a). Write parametric equations for the line L.

b). Find the point where the line L meets the plane $x + y + z = -13$.

2. **[4 points]** Find the velocity $\vec{v}(t)$ and acceleration $\vec{a}(t)$ along the curve:

$$\vec{r}(t) = 2\cos t\ \vec{i} + 2\sin t\ \vec{j} + 2t\,\vec{k}.$$

3. **[8 points]** Find parametric equations for the line tangent to the curve:

$$\vec{r}(t) = (4\cos t)\,\vec{i} + \left(t^2 - 6\sin t\right)\vec{j} + \left(e^{4t}\right)\vec{k}$$

at the value $t = 0$ of the parameter.