

Please PRINT your name \_\_\_\_\_

**No calculators, cell phones, computers, notes, etc.**

Circle your answer. Make your work correct, complete and coherent.

The quiz is worth 5 points. The solutions will be posted on my website later today.

**Quiz 7, Wednesday, September 30, 2020**

**Find the point where the line**

$$\begin{cases} x = 1 - t \\ y = 3t \\ z = 1 + t \end{cases}$$

**meets the plane**  $2x - y + 3z = 6$ .

**Answer:** The parametric equations give the position of an object at time  $t$ . We first find out WHEN the object is on the plane. The object is on the plane when

$$2(1 - t) - 3t + 3(1 + t) = 6$$

$$-2t + 5 = 6$$

$$-1 = 2t$$

$$\frac{-1}{2} = t$$

At  $t = -\frac{1}{2}$  the object is standing on

$$\left( \frac{3}{2}, -\frac{3}{2}, \frac{1}{2} \right).$$