

## Math 32 – Workshop #6

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1. Do the lines intersect? Be sure to show your work.

$$\begin{array}{ll} x = 4 + 6t & x = 12 + 2t \\ L_1 : y = 3 + t & L_2 : y = 7 - t \\ z = t & y = 1 + 2t \end{array}$$

2. Does the line  $L$  intersect the plane  $P$ ? If so, find the point of intersection.

$$\begin{array}{ll} x = 4 + 6t & \\ L : y = 3 + t & P : 2x + 3y - 4z = 12 \\ z = t & \end{array}$$

3. Find the equation of the plane that contains the points  $(1, 5, 4)$ ,  $(4, -3, 7)$ , and  $(-2, -5, 1)$ .
4. Find the equation of the plane that is perpendicular to the plane  $2x + 3y - 4z = 12$  and contains the line  $x = 3 + t$ ,  $y = 1 - t$ ,  $z = 4t$ .
5. Find the equation of any plane that is parallel to the plane  $x - 5y - 4z = 12$ .