## LINES - ANSWERS

Find parametric equations for the following lines and line segments. Be sure to state the range of values for your parameter.

1. The line segment from P = (1,2,3) to Q = (8,6,8).

$$x = 1 + 7t$$

$$y = 2 + 4t$$

$$z = 3 + 5t$$

$$0 \le t \le 1$$

2. The line through P = (1,2,3) and Q = (8,6,8).

$$x = 1 + 7t$$

$$y = 2 + 4t$$

$$z = 3 + 5t$$

$$-\infty < t < \infty$$

3. The line segment from Q = (8,6,8) to P = (1,2,3).

$$x = 8 - 7t$$

$$y = 6 - 4t$$

$$z = 8 - 5t$$

$$0 \le t \le 1$$

4. The line segment from P = (2, -3, 5) to Q = (-4, -1, 0).

$$x = 2 - 6t$$

$$y = -3 + 2t$$

$$z = 5 - 5t$$

$$0 \le t \le 1$$

5. The line through P = (4,6,8) and Q = (-4,-6,-8).

$$x = 4 - 8t$$

$$y = 6 - 12t$$

$$z = 8 - 16t$$

$$-\infty < t < \infty$$