1. a. Give the vector equation, the parametric equations, and the symmetric equations for the line L through the point P \((2, -1, 5)\) that is in the direction of the vector \(v = \langle -1, 2, 7 \rangle\).

b. Give another point that is on the line. Is the point Q \((3, -3, -2)\) on L or not?

2. Give a single equation in \((x, y, z)\) coordinates for the plane through the point P above that contains the line L above and also contains the line M through P in the direction of \(w = \langle 1, -3, 7 \rangle\). Also give parametric equations for this plane.