

Name: \_\_\_\_\_ Student Number: \_\_\_\_\_

Department: \_\_\_\_\_ Signature: \_\_\_\_\_

**Question 1.**(4 points) Let  $L$  be the line passing through the points  $P = (-1, 1, 2)$  and  $Q = (1, 4, 3)$ .

Write a vector equation for the line passing from  $P(-1, 1, 2)$  and  $Q(1, 4, 3)$ .

**Question 2.**(6 points) Find an equation of the plane in the form of  $Ax + By + Cz = D$  that contains the line  $x = 1 + t$ ,  $y = 2 - t$ ,  $z = 4 - 3t$  and is parallel to the plane  $5x + 2y + z = 1$ .