MATH-1300 VECTORS GEOMETRY AND LINEAR ALGEBRA
ASSIGNMENT #2-UNIT 2

1. Find the equations of the plane passing through the 3 noncollinear points A(-2, 3, 1), $B(1, -2, -3$) and $C(4, 1\ 2)$. (**5 marks**)

2. Given the points $A(2, -2,\ 3$) and $B(4, 2, -1$) (**9 marks**)
   a) Find the parametric equations of the line l passing through A and B.
   b) Find the symmetric equation of the line l passing through A and B.
   c) Find the distance between the point $P(1, 2,\ 2)$ and the line l.

3. Given the lines $l_1: x = 2 - 3t, y = -2 + 5t, z = 1 + 2t$ and $l_2: x = 1 + 2t, y = 4 - t, z = -1 - 2t$ (**8 marks**)
   a) Find the distance between l_1 and l_2
   b) Find the distance between the point $P(1, -2, 3)$ and the line l_1.

4. Given two planes $-2x + 3y - z = 2$ and $x + 4y - 3z = -1$. (**8 marks**)

   a) Find a point-parallel form equation for the line of intersection of the two planes
   b) Find the dihedral angle between the two planes (in degree).