Worksheet #18

(1) Find a parametric equation for the line through $(1, -2, 3)$ and $(4, 5, 6)$.

(2) Write both the parametric equations and the symmetric equations for the line through the point $(1, 1, 1)$ parallel to the vector $< -10, -100, -1000 >$.

(3) Show that the lines

$$\frac{x-1}{-4} = \frac{y-2}{3} = \frac{z-4}{-2}$$

and

$$\frac{x-2}{-1} = \frac{y-1}{1} = \frac{z+2}{6}$$

intersect and find the equation of the plane they determine.

(4) Let $3x - 2y + z = 1$ and $2x + y - 3z = 3$ be two planes. Find the parametric equation for the line of intersection of the planes. Also find the angle between the two planes.