The line l has equation $\mathbf{r} = 4\mathbf{i} + 3\mathbf{j} - \mathbf{k} + \mu(\mathbf{i} + 2\mathbf{j} - 2\mathbf{k})$. The plane p has equation $2x - 3y - z = 4$.

(i) Find the position vector of the point of intersection of l and p. [3]

(ii) Find the acute angle between l and p. [3]

(iii) A second plane q is parallel to l, perpendicular to p and contains the point with position vector $4\mathbf{j} - \mathbf{k}$. Find the equation of q, giving your answer in the form $ax + by + cz = d$. [5]