The line l has equation $\mathbf{r} = \mathbf{i} + 2\mathbf{j} - 3\mathbf{k} + \lambda(2\mathbf{i} - \mathbf{j} + \mathbf{k})$. The plane p has equation $3x + y - 5z = 20$.

(i) Show that the line l lies in the plane p. [3]

(ii) A second plane is parallel to l, perpendicular to p and contains the point with position vector $3\mathbf{i} - \mathbf{j} + 2\mathbf{k}$. Find the equation of this plane, giving your answer in the form $ax + by + cz = d$. [5]