1. Let \( \mathbf{u} = 2\mathbf{i} + 3\mathbf{j} \), \( \mathbf{v} = -\mathbf{j} + 2\mathbf{k} \) and \( \mathbf{w} = \mathbf{i} + \mathbf{j} + \mathbf{k} \).
   Evaluate \( \mathbf{u} \times (\mathbf{v} \times \mathbf{w}) \) and \( (\mathbf{u} \times \mathbf{v}) \times \mathbf{w} \).

2. Find the value of \( c \) so that the following lines intersect
   \[
   L_1 : \frac{x-1}{0} = \frac{y+1}{2} = \frac{z-2}{-3} \\
   L_2 : x = 2 - 4t, y = 1 + t, z = c + 2t
   \]

3. Find an equation for the plane that passes through the point \((0,2,-1)\) and contains the line
   \[
   L : x = 1 + t, y = -1 + 5t, z = 3 - t.
   \]

4. Find a simplified equation for the set of points \( P \) for which the distance to the \( x \)-axis is twice the distance to the \( yz \)-plane.
   Identify this surface.