If \( \mathbf{a} = \mathbf{i} + 2\mathbf{j} + \mathbf{k} \) and \( \mathbf{b} = 2\mathbf{i} + 3\mathbf{j} + 2\mathbf{k} \), compute these:

A. Calculate the cross product \( \mathbf{a} \times \mathbf{b} \).

B. Give the equation of the plane through the point \( (1, 2, 3) \) with normal vector \( \mathbf{a} \).

C. Give an equation (in any form you like) of the line through the point \( (1, 2, 3) \) with direction vector \( \mathbf{a} \).