- $c_x = a_y b_z a_z b_y$
- $c_y = a_z b_x a_x b_z$
- $c_z = a_x b_y a_y b_x$

Example: The cross product of $\mathbf{a} = (2,3,4)$ and $\mathbf{b} = (5,6,7)$

- $c_x = a_y b_z a_z b_y = 3 \times 7 4 \times 6 = -3$
- $c_y = a_z b_x a_x b_z = 4 \times 5 2 \times 7 = 6$
- $c_z = a_x b_y a_y b_x = 2 \times 6 3 \times 5 = -3$

Answer: **a** \times **b** = (-3,6,-3)



Which Way?

The cross product could point in the completely opposite direction and still be at right angles to the two other vectors, so we have the:

"Right Hand Rule"

With your right-hand, point your index finger along vector **a**, and point your middle finger along vector **b**: the cross product goes in the direction of your thumb.