

$$\mathbf{u} \wedge \mathbf{v} = \mathbf{w}$$

The diagram illustrates the calculation of the cross product $\mathbf{u} \wedge \mathbf{v} = \mathbf{w}$ using the determinant method. The vectors \mathbf{u} and \mathbf{v} are shown with their components u_x, u_y, u_z and v_x, v_y, v_z respectively. The resulting vector \mathbf{w} is shown with its components w_x, w_y, w_z .

The components of \mathbf{w} are calculated as follows:

- $w_x = u_y v_z - u_z v_y$
- $w_y = u_z v_x - u_x v_z$
- $w_z = u_x v_y - u_y v_x$

Blue arrows indicate the cross product of the components u_x and v_y , and u_y and v_x . A red arrow points to the third component of \mathbf{w} , w_z .