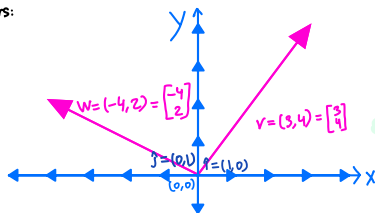


X-Y coordinate system

Std. basis vectors:

$$\hat{i} = (1, 0)$$

$$\hat{j} = (0, 1)$$



$$v = 3\hat{i} + 4\hat{j}$$

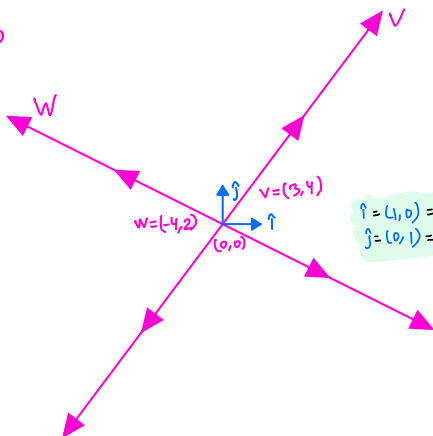
$$w = -4\hat{i} + 2\hat{j}$$

V-W coordinate system

Std. basis vectors:

$$v = (3, 4)$$

$$w = (-4, 2)$$



$$\hat{i} = (1, 0) = \frac{1}{11}v + \frac{2}{11}w$$

$$\hat{j} = (0, 1) = -\frac{2}{11}v + \frac{3}{11}w$$