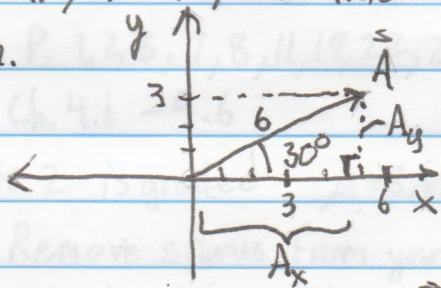Ex) Convert $(R, \theta) = (6, 30)$ into vector component notation.
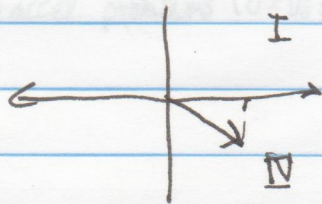

$$A_x = A \cos 30°$$
$$= 6 \cos 30° = 5.196$$
$$A_y = 6 \sin 30° = 3$$
$$\vec{A} = 5.2\hat{\imath} + 3\hat{\jmath}$$

Ex) Find $\vec{D} = \vec{A} + \vec{B} + \vec{C}$ if $\vec{A} = (3\hat{\imath} - 3\hat{\jmath})$, $\vec{B} = \hat{\imath} - 4\hat{\jmath}$ and $\vec{C} = -2\hat{\imath} + 5\hat{\jmath}$

$$\vec{D} = (A_x + B_x + C_x)\hat{\imath} + (A_y + B_y + C_y)\hat{\jmath}$$
$$= (3 + 1 - 2)\hat{\imath} + (-3 - 4 + 5)\hat{\jmath}$$
$$\boxed{\vec{D} = 2\hat{\imath} - 2\hat{\jmath}}$$

$$|\vec{D}| = \sqrt{2^2 + 2^2} = \sqrt{8} = \boxed{2\sqrt{2}}, \quad \theta = \tan^{-1}\left(\frac{-2}{2}\right) = \boxed{-45°}$$