1.1.9.7

EE24BTECH11032 - John Bobby

Question: The distance of the point $(-6, 8)$ from the orgin is
Solution: The length of a vector is defined as

$$\|x\| = \sqrt{x^T x} \tag{0.1}$$

$$x = \begin{pmatrix} -6 \\ 8 \end{pmatrix} \tag{0.2}$$

$$x^T x = \begin{pmatrix} -6, 8 \end{pmatrix} \begin{pmatrix} -6 \\ 8 \end{pmatrix} = 6^2 = 8^2 = 100 \tag{0.3}$$

$$\|x\| = \sqrt{100} = 10 \tag{0.4}$$

$\therefore$The distance from orgin is 10 units (0.5)

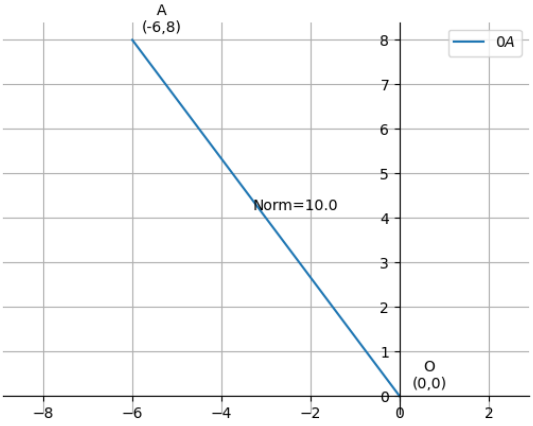

Fig. 0.1: Plot of point $(6, -8)$