

# 4.4.2.14

EE24BTECH11010 - Balaji B

## Question:

$$x^2 + y^2 - 4x - 8y - 45 = 0$$

## Solution:

Variable	Description
<b>c</b>	Centre of the Circle
<b>r</b>	Radius of the circle

TABLE I: Variables Used

The given circle can be expressed as

$$\|\mathbf{x}\|^2 + 2 \begin{pmatrix} -2 & -4 \end{pmatrix} \mathbf{x} - 45 = 0 \quad (1)$$

where

$$\mathbf{u} = \begin{pmatrix} -2 \\ -4 \end{pmatrix}, f = -45 \quad (2)$$

$$\Rightarrow \mathbf{c} = \begin{pmatrix} 2 \\ 4 \end{pmatrix}, r = \sqrt{65}. \quad (3)$$

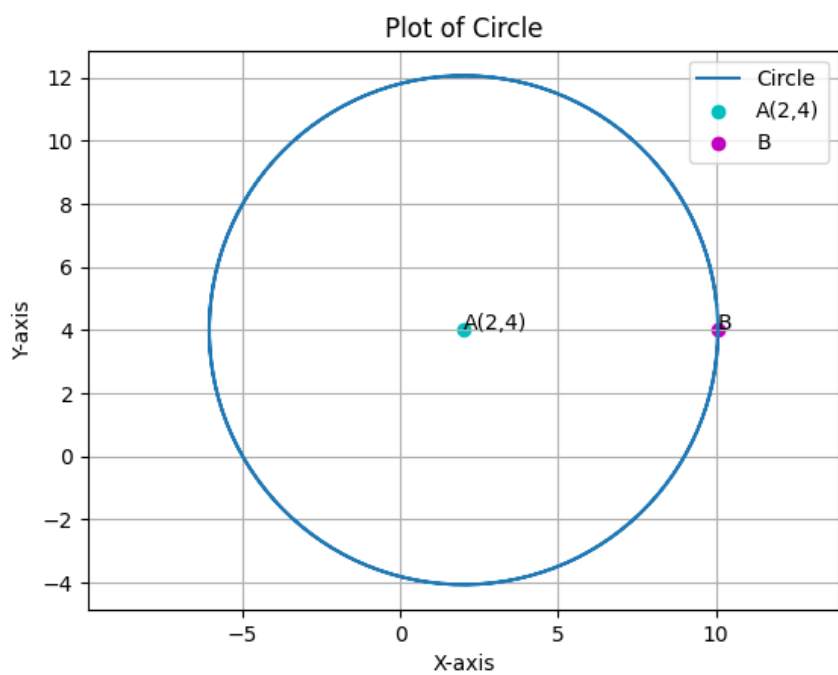


Fig. 1: Plot of the Circle