1-1.5-1

EE24BTECH11060 - Sruthi Bijili

Question:

The centre of the circle whose end points of the diameter are $(-6, 3)$ and $(6, 4)$ is

(10, 2020)

solution:

Variable	Description
$\mathbf{A}\,(-6, 3)$	One end of the Diameter
$\mathbf{B}\,(6, 4)$	other end of the Diameter
$\mathbf{C}$	center of the circle
$\frac{\mathbf{B}+k\mathbf{A}}{k+1}$	section formula

TABLE 0: Input parameters

$$k = 1 \tag{0.1}$$

$$\implies \mathbf{C} = \frac{\mathbf{A} + \mathbf{B}}{2} \tag{0.2}$$

$$\implies \mathbf{C} = \frac{\begin{pmatrix} -6 \\ 3 \end{pmatrix} + \begin{pmatrix} 6 \\ 4 \end{pmatrix}}{2} \tag{0.3}$$

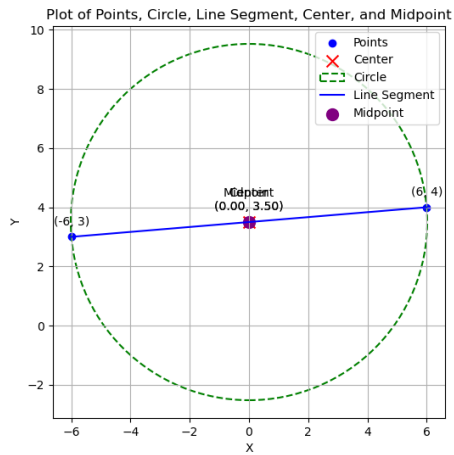$$\implies \mathbf{C} = \begin{pmatrix} 0 \\ \frac{7}{2} \end{pmatrix} \tag{0.4}$$

Fig. 0.1: circle with diameter AB