1.8.4

EE24BTECH11058 - P.Shiny Diavajna

Question: The equation of a circle with origin as centre and passing through the vertices of an equilateral triangle whose median is of length 3a is

Solution:

Symbol	Value
O	Centre of the circle
$3a$	median of the triangle
r	radius of the circle

TABLE 0: Variables Used

$$\|x\|^2 + u^\top x + f = 0 \tag{0.1}$$

$$u = \begin{pmatrix} 0 \\ 0 \end{pmatrix} \tag{0.2}$$

$$r = 2a \tag{0.3}$$

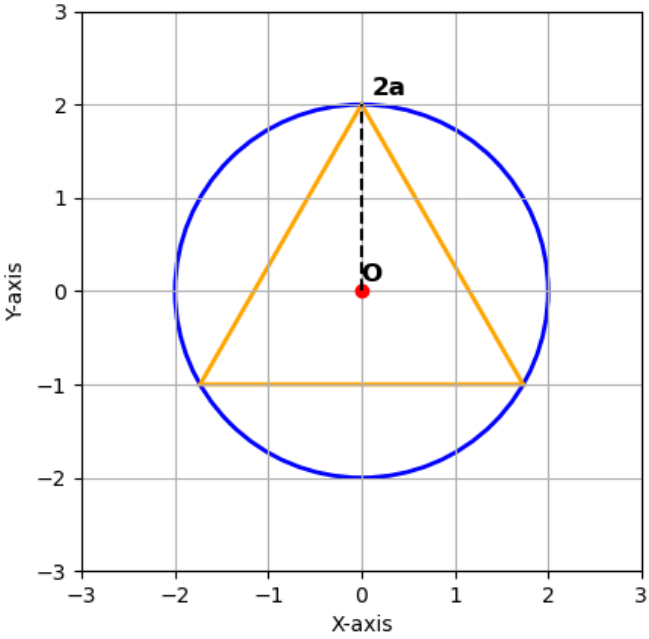
$$f = \|u\|^2 - r^2 \tag{0.4}$$

$$f = -4a^2 \tag{0.5}$$

$$\|x\|^2 - 4a^2 = 0 \tag{0.6}$$

$$x^2 + y^2 = 4a^2 \tag{0.7}$$

$$\tag{0.8}$$


2a
O
Y-axis
X-axis
3
2
1
0
−1
−2
−3
−3
−2
−1
0
1
2
3