Assignment 6

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Question

Can you construct a rhombus ABCD with AC = 6 and BD = 7?

Answer

assuming that the diagonals intersect at (0,0)
and we know that the diagonals bisect each other at 90° The four vertices of the diagonals can be easily calculated

$$AC = 6$$

and taking the diagonal AC has a slope of 1
Equation for line AC becomes

$$x = y$$

therefore the points A and C become

$$A = (-3, -3)$$
$$C = (3, 3)$$

now, since the diagonals bisect each other at 90° slope of BD becomes -1 and since the diagonals are passing through (0,0) Equation of BD becomes

$$x = -y$$

hence, the point B and D are

$$B = (3.5, -3.5)$$
$$D = (-3.5, 3.5)$$

now joining these points we get the rhombus ABCD which is shown in below figure

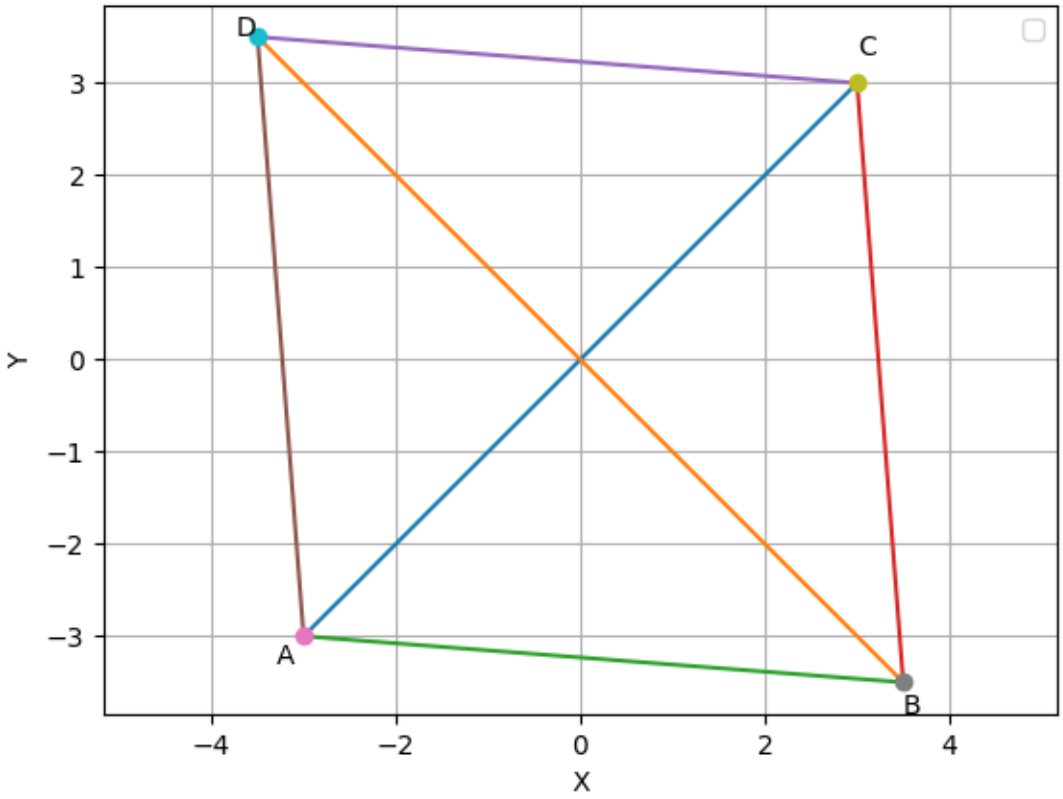

Figure 1: Rhombus ABCD

Quesiton

Draw a circle of diameter 6.1

Answer

since the diameter = 6.1
radius of the circle is

$$r = 6.1/2$$

Taking the center at

$$O(0, 0)$$

we can draw the circle the output figure is as below

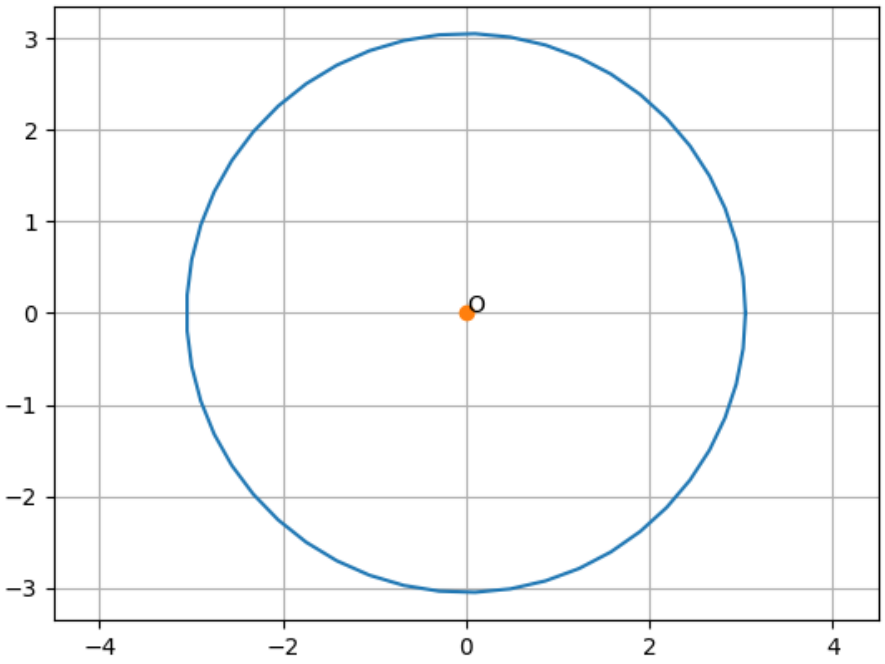

Figure 2: Circle O