

Theorem 13-2

An equation of the circle with center (a, b) and radius r is

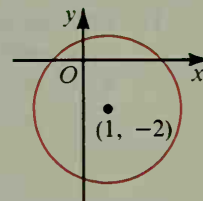
$$(x - a)^2 + (y - b)^2 = r^2.$$

Example 4 Find the center and the radius of the circle with equation $(x - 1)^2 + (y + 2)^2 = 9$. Sketch the graph.

Solution $(x - 1)^2 + (y - (-2))^2 = 3^2$

The center is point $(1, -2)$ and the radius is 3.

The graph is shown at the right.



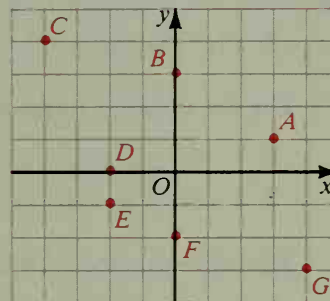
Classroom Exercises

1. What is the x -coordinate of every point that lies on a vertical line through C ?

2. Which of the following points lie on a horizontal line through C ?

(2, 4) (2, -4) (0, 4)
(4, 3) (15, 4) (-4, 3)

3. Find OD and BF .



In Exercises 4–9 state: a. the coordinates of T
b. the lengths of the legs of the right triangle
c. the length of the segment shown

