

Classwork Distance/Midpoint and Circles

Please work all problems on a separate sheet of paper.

In exercises 1 – 4, determine the length and midpoint of the line segments with the given endpoints.

1. $(7, 2)$ and $(-1, -4)$
2. $(9, -3)$ and $(-6, 5)$
3. $(5, 8)$ and $(1, -2)$
4. $(-6, -3)$ and $(1, 4)$

In exercises 5 – 9, find the equations of the following circles and graph the equations. Write the answers in standard form.

5. *Center* = $C(0, 0)$; radius=1
6. *Center* = $C(5, 2)$; radius=3
7. *Center* = $C(-3, -4)$; radius= $\sqrt{5}$
8. *Center* = $C(1, 3)$; passing through $(5, 5)$
9. $(-7, 1)$ and $(3, 9)$ are endpoints of a diameter

In exercises 10 – 15, determine whether the given equation represents a circle, point or no graph. If the graph of the equation is a circle; find the center and radius, **and then draw the circle**. If the equation represents a point, name the point.

10. $(x-5)^2 + (y+3)^2 = 4$
11. $x^2 + y^2 + 4x + 6y + 6 = 0$
12. $x^2 + y^2 + 4y - 2 = 0$
13. $x^2 + y^2 - 6x - 4y - 12 = 0$
14. $x^2 + y^2 - 6x + 2y + 14 = 0$
15. $x^2 + y^2 + 10x - 6y + 34 = 0$