

What you need to be able to do, from Chapter 2

1. Find the distance, and the midpoint of the line segment, between two points.

Ex: For the points $A = (-2, 5)$ and $B = (2, -4)$, find...

- a. the length of the line segment connecting these points. (Simplify your answer.)
- b. the coordinates of the point M on line AB , where the length of segment AM is equal to the length of segment MB .

2. Graph a linear equation.

Ex: Graph the equation $3x + 4y = 9$. Identify the slope and label the x and y intercepts.

3. Use completing the square to find the center and radius of a circle, and reverse the process.

Ex: Find the center and radius of the circle with equation $x^2 + y^2 + 2x - 10y + 17 = 0$

Ex: Find an equation in standard form for a circle with center $(-1, 1)$ passing through $(4, -11)$.

4. Find the equation of a line.

Ex: Find the equation of the line ...

- a. parallel to the line $6x + 4y = 3$, passing through the point $(6, 1)$.
- b. perpendicular to the line $4x + 3y = 1$, passing through the point $(5, 0)$.
- c. having x -intercept 6 and y -intercept 5.

5. Write a linear equation that models the relationship between two quantities.

Ex: The manager of a furniture factory finds that it costs \$2000 to manufacture 100 chairs in a day, and \$5400 to produce 300 chairs in a day.

- a. Assuming that the relationship between cost and the number of chairs produced is linear, find an equation that expresses this relationship, and graph the equation.
- b. What is the slope of the line in part (a) and what does it represent?
- c. What is the y -intercept of this line, and what does it represent?