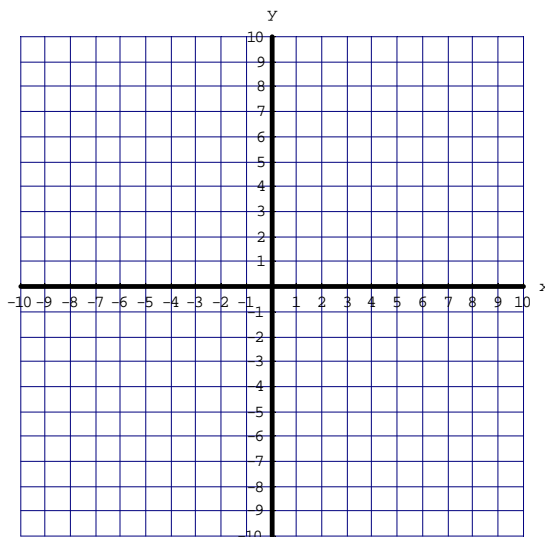


Monday, 6/05/06

Notes #24: Distance, Slope, Circles (Sections 13.1, 13.2)

Graph the two points and find the distance between the two points:

1.) (-3, 2) and (7, 2)



2.) (2, -3) and (-1, 1)

Distance Formula

The distance between two points, (x_1, y_1) and (x_2, y_2) is:

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

Use the formula to find the distance between the two points. Leave in reduced radical form. (Hint: first label your points as (x_1, y_1) and (x_2, y_2))

3.) (2, -3) and (-1, 1)

4.) (9, -4) and (1, -8)

5.) Find AB if A(-3, 2) and B(-1, -2)

Circles

Equations of circles are written in this form:

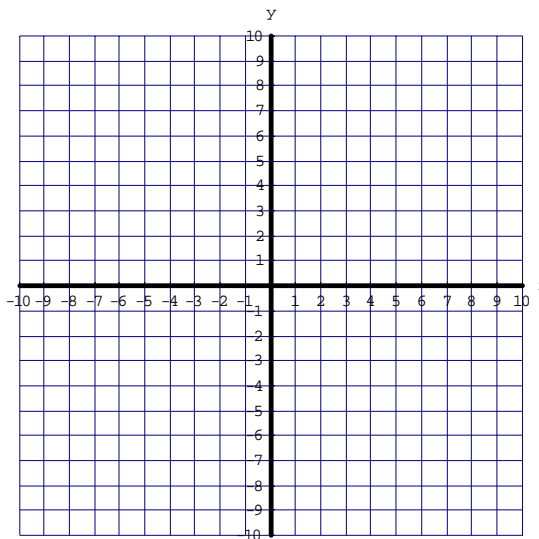
$$(x - h)^2 + (y - k)^2 = r^2$$

Where (h, k) is the _____ of the circle and r is the _____ of the circle

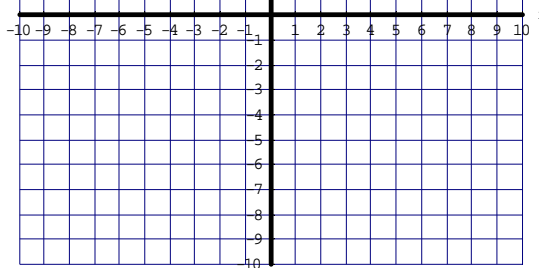
Graph and find the equation of each circle:

- Graph the center point
- From this point, go the distance of the radius up, down, left, and right
- Connect these 4 points as a circle

6.) C (-2, 4) r = 4

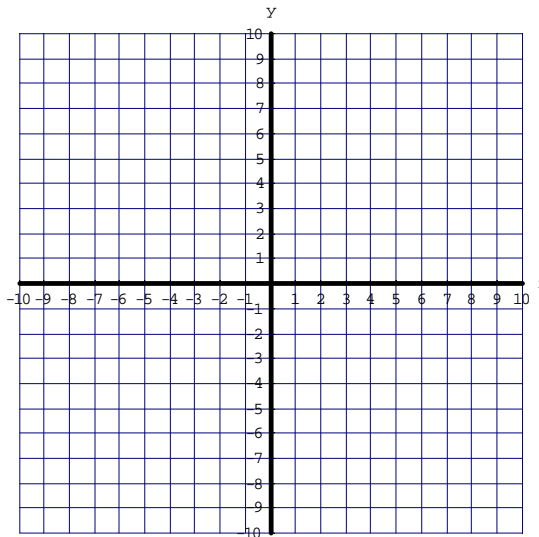


7.) C(5, 0), r = 3



Name the center and radius of each circle, then graph.

8.) $(x + 1)^2 + (y - 2)^2 = 9$



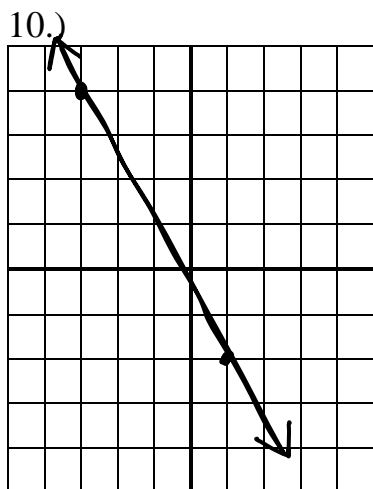
9.) $x^2 + (y + 4)^2 = \frac{81}{16}$

Slope is used to describe the _____ and _____ of lines.

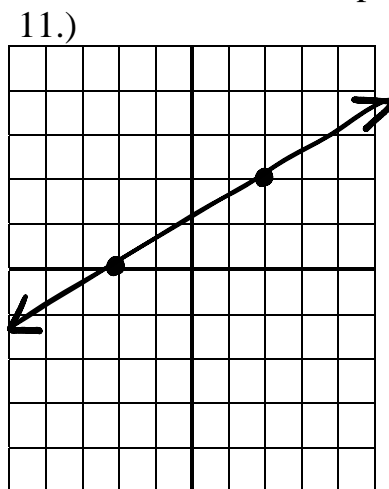
Sketch a line with:

- a) positive slope b) negative slope c) zero slope d) undefined slope

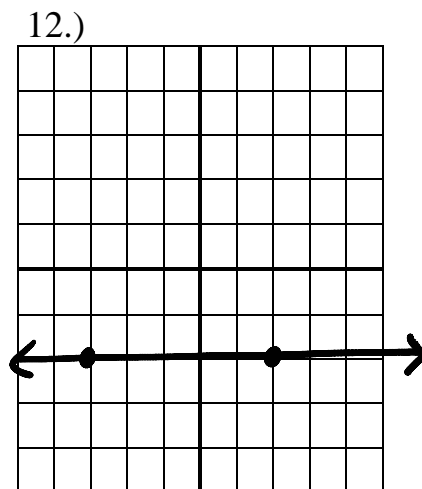
A line is shown. Count “rise over run” to find the slope of the line.



Slope =



Slope =



Slope =

Without using a graph, use:

$$\text{Slope} = m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\frac{0}{5} = 0$$

$$\frac{5}{0} = \text{undefined}$$

Find the slope of the line between the two points:

13.) (-4, 1), (3, 2)

14.) (6, -3) and (2, -1)

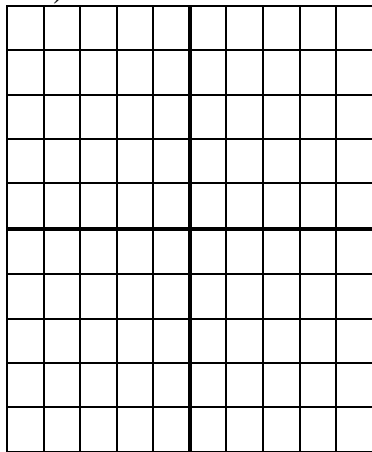
15.) (-1, 4) and (-1, -3)

16.) (-1, 7) and (5, 7)

17.) A line with slope $\frac{7}{3}$ passes through the points (1, 2) and (-2, y). Find y.

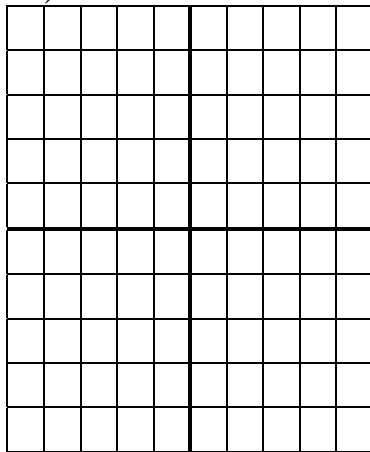
A point P on a line and the slope of the line are given. Sketch the line and find the coordinates of two other points on the line

18.)



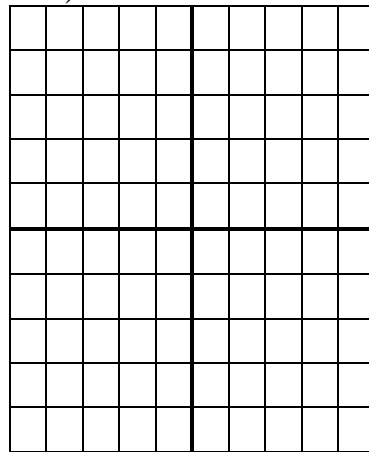
P (-2, 1); slope = $\frac{4}{5}$

19.)



P (0, -3); slope = -2

20.)



P (2, 0); slope = $-\frac{2}{3}$