

## PROPERTIES OF LINES

1. Graph each of the following lines on the same set of axes.

a)  $y = 3x - 1$

b)  $y = 3x + 2$

2. What is the slope of each of the lines?

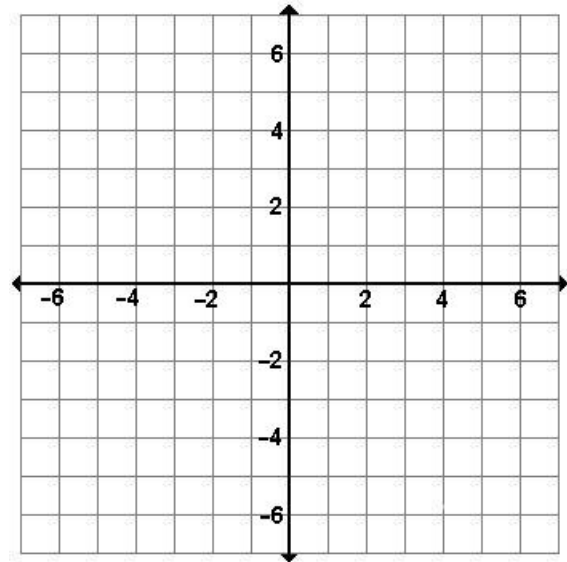
a)

b)

3. What is the y-intercept of each line?

a)

b)



4. Graph each of the following lines on the same set of axes.

a)  $y = -2x + 1$

b)  $y = -2x - 3$

5. What is the slope of each of the lines?

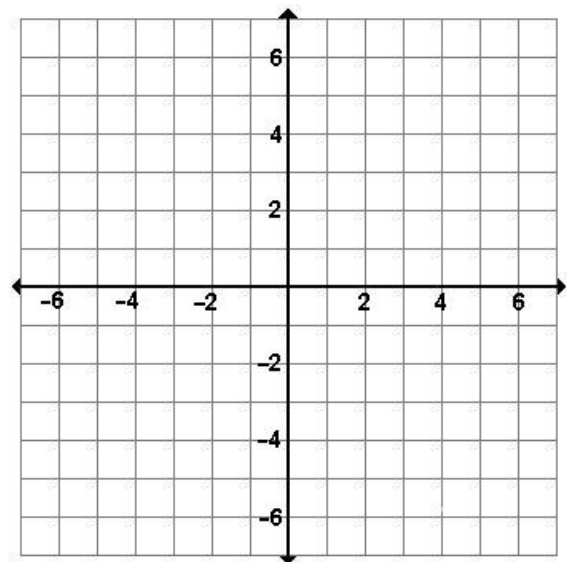
a)

b)

6. What is the y-intercept of each line?

a)

b)



7. What word best describes each pair of lines?

8. Graph each of the following lines on the same set of axes.

a)  $y = \frac{1}{3}x - 3$

b)  $y = 4x - 3$

9. What is the slope of each of the lines?

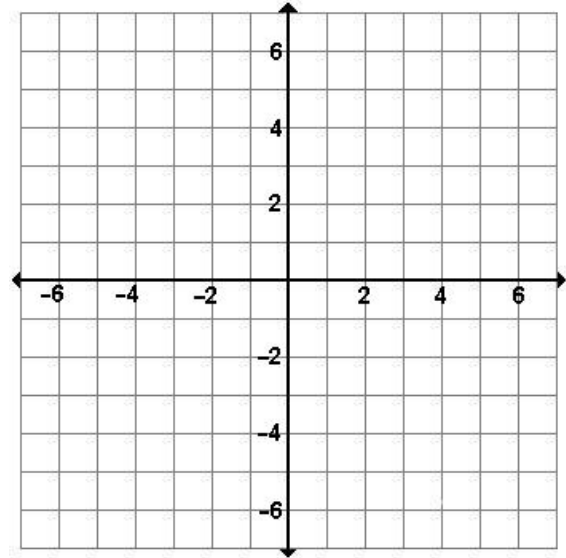
a)  $m$

b)  $m$

10. What do you notice about the y-intercepts of each line (both on the graph and in the equation)?

a)

b)



11. Use the lines listed below to answer the following

a)  $y = 2x - 4$

b)  $y = -3x + 5$

c)  $y = 2x$

d)  $y = -3x - 1$

i) Which lines are parallel

ii) Which lines have the same y-intercept

## Summary

In the equation  $y = mx + b$ :

The  $m$  is the \_\_\_\_\_ which determines the \_\_\_\_\_ of the line.

Ignoring the sign on the coefficient of  $x$ , the greater the coefficient, the \_\_\_\_\_ the line.

If the line rises to the right then it will have a \_\_\_\_\_ slope. If it falls down to the \_\_\_\_\_ then it will have a negative slope.

The  $b$  is the \_\_\_\_\_ and it determines where the line crosses the \_\_\_\_\_

- **Parallel lines** have the \_\_\_\_\_ slope but a different \_\_\_\_\_
- A **horizontal line** has a slope of \_\_\_\_\_ which means the value for \_\_\_\_\_ is \_\_\_\_\_.
- A **vertical line** has an \_\_\_\_\_ slope which means the value for \_\_\_\_\_ is \_\_\_\_\_.