

Predictions & Lines:
 $y = mx + b$

- Equations of lines can be written in $y = mx + b$ format or **slope y-intercept form** which is also known as **standard form**.
- To be able to determine the equation of a line we need 2 things:
 1. a **slope**
 2. a **point on the line**

SLOPE:

- the steepness of a line
- in equation form it is the coefficient of the variable x .
- in the format $y = mx + b$ $m = \text{slope}$



Types of Slopes:

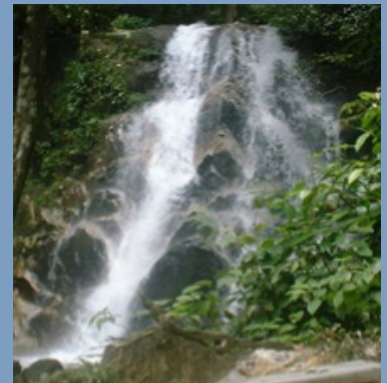
Slope

Positive

Negative





Undefined

Zero



Steepness of Slopes:

Examples of Slopes for Steepness

			
Not Steep Slope = 0.1	A Little Steeper Slope = 1	Even Steeper Slope = 2	Very Steep Slope = 4

Small slope

Large slope

How to Find Slope:

① From the equation $y = mx + b$

the number found
where the "m" is

Examples:

1. $y = -2x + 3$

2. $y = \frac{1}{3}x - 2$

State the slope:

$$y = 6x - 8$$

$$y = 10 + \frac{2}{3}x$$

$$y = x - 1$$

$$2y = 4x + 10$$

State the slope of these equations:

a) $y = 5x - 2$

b) $y = -2x + 1$

c) $y = x - 7$

d) $y = 18 + x$

e) $y = \frac{3}{4}x + 91$

f) $y = 2$

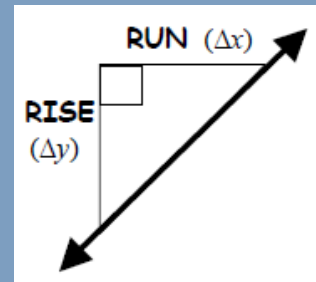
g) $5y = 25x - 5$

h) $-3y = 12 - 9x$

i) $4x + 8y - 16 = 0$

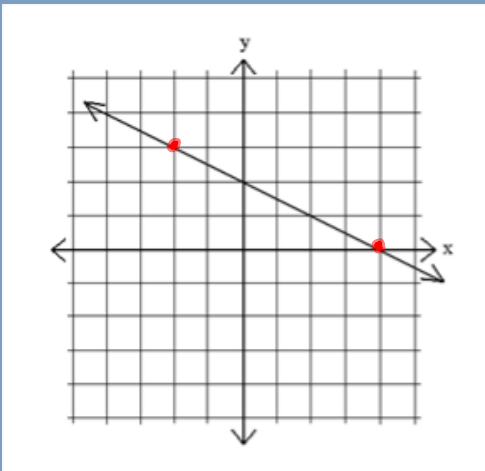
2

From a graph using rise
run

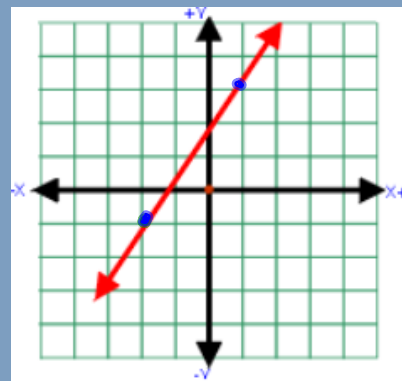


Examples:

1.



2.



③ From 2 co-ordinate points

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

Examples:

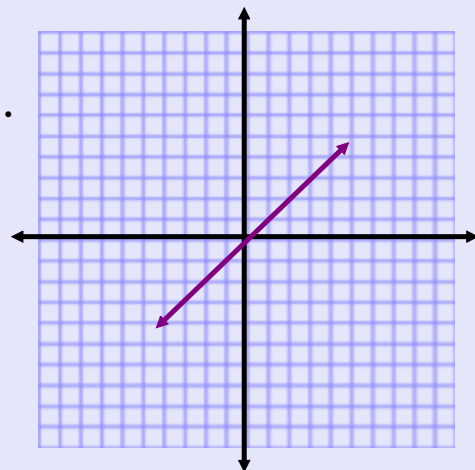
1. (2, 7) & (5, 1) 2. (-2, 5) & (-5, 5)

Practice:

State what the slope is for each of the following questions:

1. $y = -\frac{2}{3}x + 2$

2.



3. $(1,4)$ $(-8,-7)$

Attachments

Sec 3.4 - Slopes.doc

Sec 3.4 - Write the equation of a line (1).doc

3.4 Review Assignment.doc

sec. 3.4 - Write the equation of a line (2).doc