

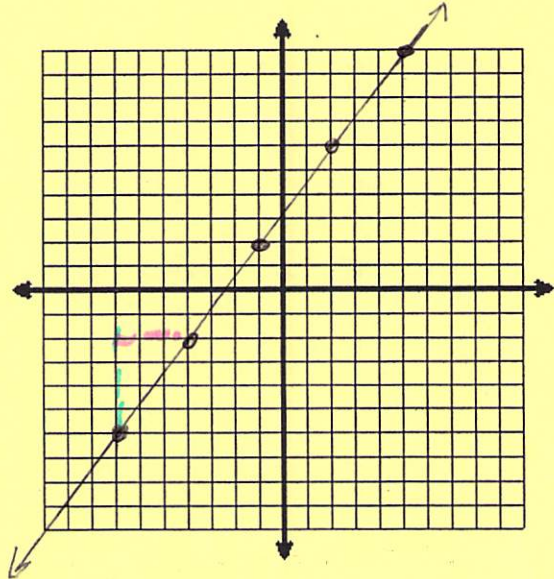
6-1 Calculating Slope of a Line

In this chapter, we will be examining **Linear Functions** and their graphs. A **Linear Function** is a function that graphs a straight line. Linear Functions are in the form $y = mx + b$

Does this table represent a linear function? Yes

X	Y
-7	-6
-4	-2
-1	2
2	6
5	10

3 } (-7, -6)
 3 } (-4, -2)
 3 } (-1, 2)
 3 } (2, 6)
 3 } (5, 10)



Calculating the slope of a line can be done using the following formulas:

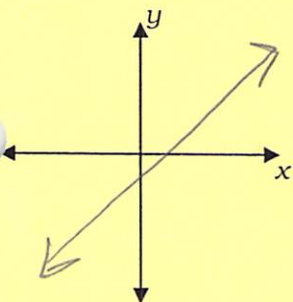
SLOPE = $\frac{\text{rise}}{\text{run}}$ or $\frac{\text{Change in } y}{\text{Change in } x}$ or $\frac{y_2 - y_1}{x_2 - x_1}$

(Δ) is written above "Change in y" and below "Change in x".

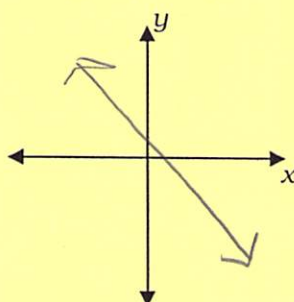
Given Two Points	Given a Graph	Given a Table
x_1, y_1 $(2, 6)$ x_2, y_2 $(5, 10)$ $\frac{10 - 6}{5 - 2} = \frac{4}{3}$	rise: $\frac{4}{3}$ run: $\frac{4}{3}$	$\frac{4}{3}$

Sketch a graph of a linear equation with the following slopes:

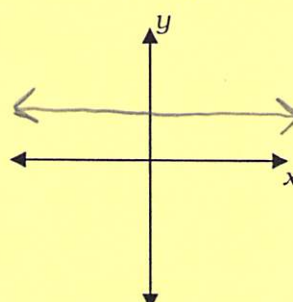
Positive Slope



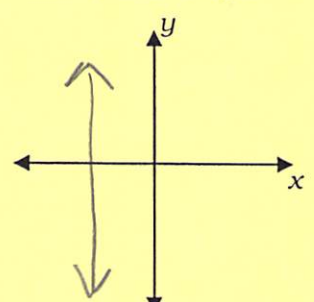
Negative Slope



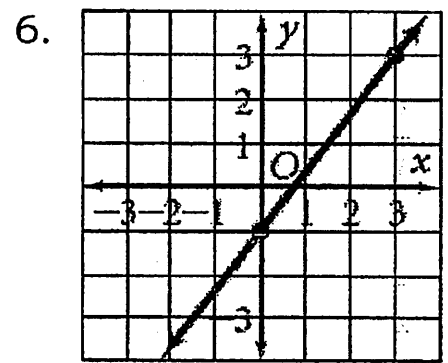
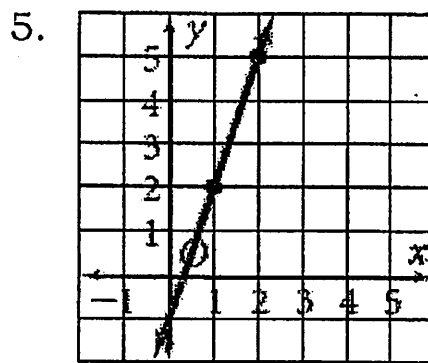
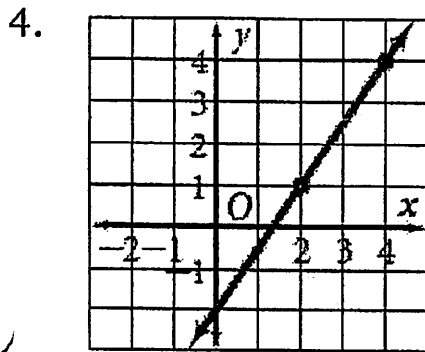
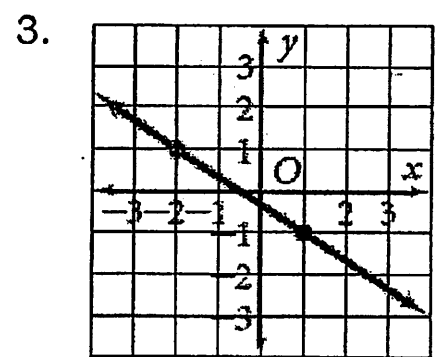
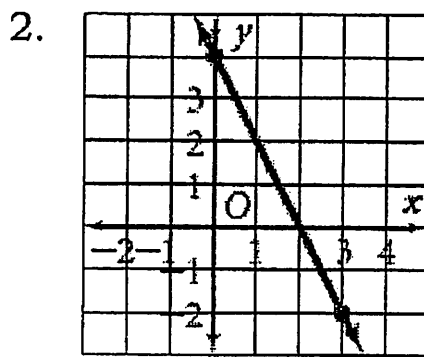
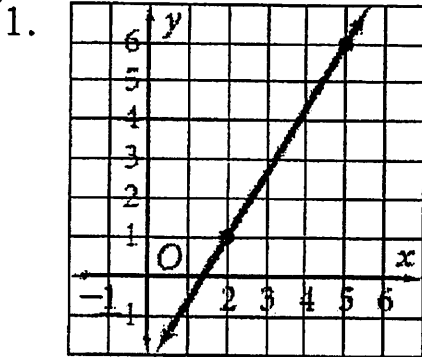
Zero Slope



Undefined Slope



Calculate the slope of a line given the graph.



Calculate the slope of a line given two points and circle the type of linear graph the slope would produce.

7. (1, 2) and (3, 4)

8. (-8, 2) and (4, -6)

Uphill Downhill

Uphill Downhill

Horizontal Vertical

Horizontal Vertical

9. (17, -13) and (17, 9)

10. (19, -2) and (-11, 10)

Uphill Downhill

Uphill Downhill

Horizontal Vertical

Horizontal Vertical