NAME Key

Notes: Finding Slope from a Graph

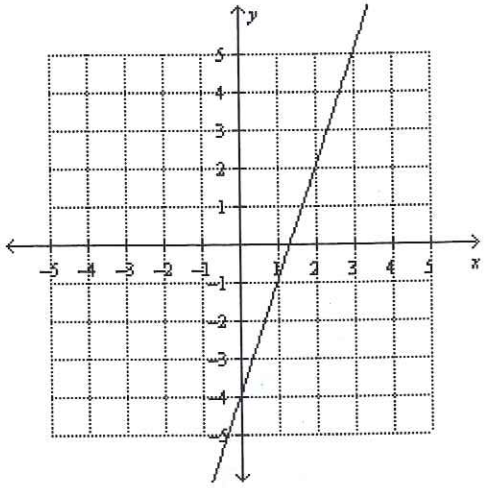
The mathematical term for steepness is slope.

We measure this by using the following formula...

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{\text{rise}}{\text{run}} = \frac{\text{fall}}{\text{run}}$$

Examples...

1.

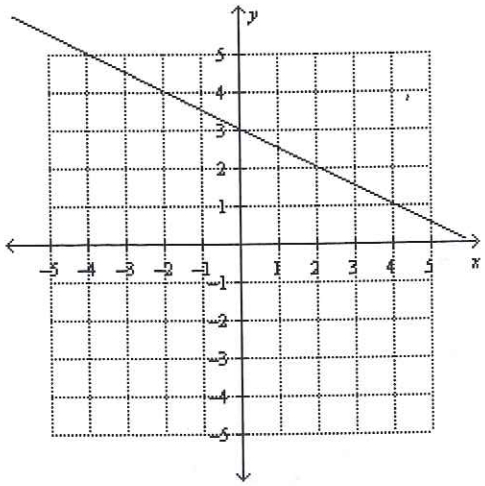


Slope = 3

y-intercept = (0, -4)

Equation = $y = 3x + -4$

2.



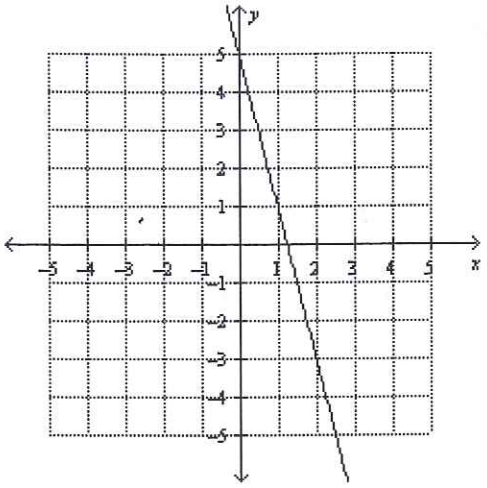
Slope = $-\frac{1}{2}$

y-intercept = (0, 3)

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

Now you try...

3.

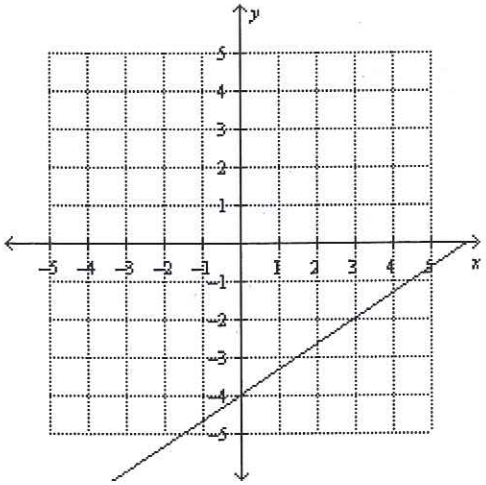


Slope = -4

y-intercept = $(0, 5)$

Equation = $y = -4x + 5$

4.

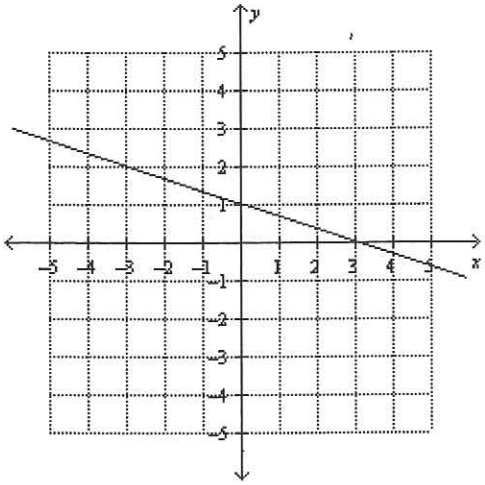


Slope = $\frac{2}{3}$

y-intercept = $(0, -4)$

Equation = $y = \frac{2}{3}x + -4$

5.

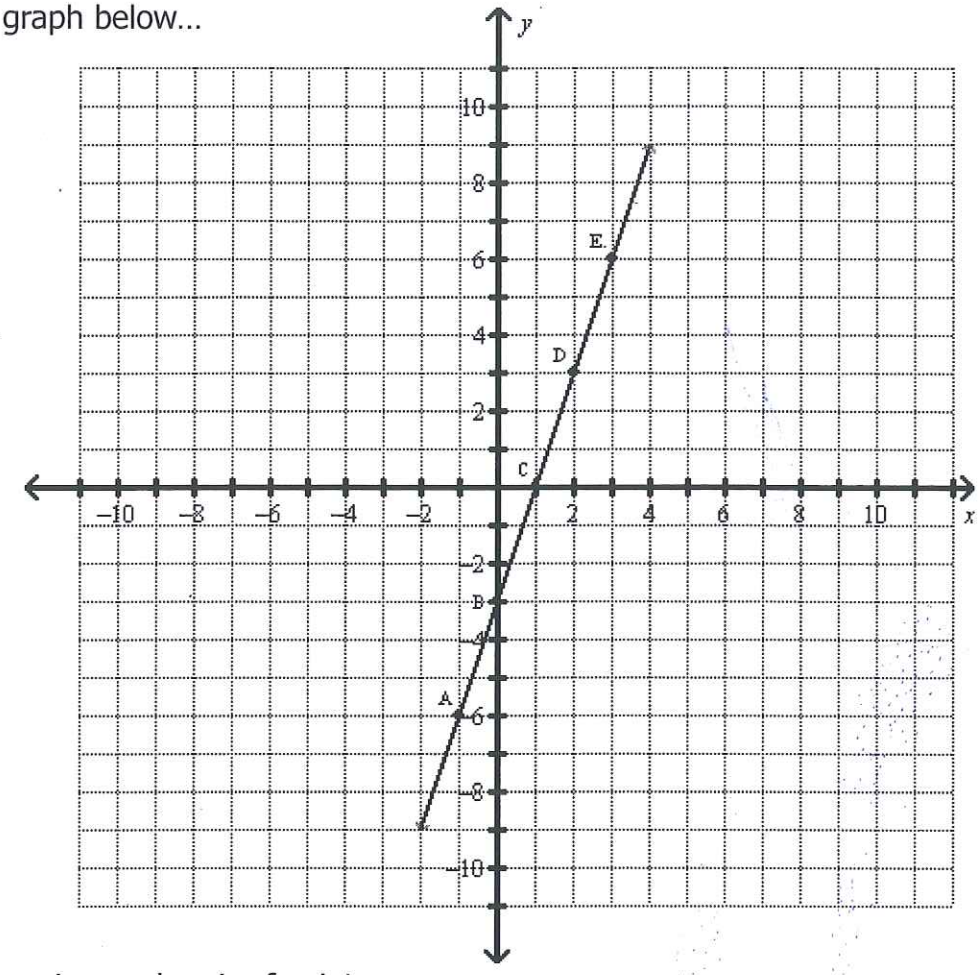


Slope = $-\frac{1}{3}$

y-intercept = $(0, 1)$

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

6. Consider the graph below...



Find the slope using each pair of points.

a. A and E

$A(-1,-6)$ $E(3,6)$

$\frac{-6-6}{-1-3} = \frac{-12}{-4} = 3$

b. B and C

$B(0,-3)$ $C(1,0)$

$\frac{-3-0}{0-1} = \frac{-3}{-1} = 3$

c. B and D

$B(0,-3)$ $D(2,3)$

$\frac{-3-3}{0-2} = \frac{-6}{-2} = 3$

d. What do you notice about the slopes in letters a-c?

They all have the same slope.

e. Based on this information, what conclusion can you make about finding the slope of a line using two points?

Any 2 points on the same line will have the same slope.