Name _____   Date _____

Point and Slope - Guided Lesson Explanation

Explanation#1 - Let's start by defining the equation of straight line.
It can be defined as: $y = mx + b$

What do the variables mean?

m = slope (rate of change; rise over run)

b = y-intercept (where the line cross the y-axis)

x and y = are defined points on the line

What do we know?

slope (m) = 2

A point on the line can be found at: x = -3   and y = 6

What don't we know?

We don't know b (y-intercept)

We can find b by using the three values given to us. Just plug in:

$y = mx + b$

$6 = 2 (-3) + b$

$6 = -6 + b$

$12 = b$

Our equation is therefore: $y = 2x + 12$ (plug in m and b values)

Explanation#2

The value of x and y is: (3,3) (9, 5).

Slope $= \dfrac{change\ in\ y}{change\ in\ x}$

Slope $= \dfrac{5-3}{9-3} = \dfrac{2}{6} = \dfrac{1}{3}$

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Explanation#3

Working off of what we learned in #1.

What do we know?

slope (m) = 3

A point on the line can be found at: x = -2   and y = 4

What don't we know?

We don't know b (y-intercept)

We can find b by using the three values given to us. Just plug in:

$y = mx + b$

$4 = 3 (-2) + b$

$4 = -6 + b$

$10 = b$

Our equation is therefore: $y = 3x + 10$ (plug in m and b values)