

\$10.00 per hour

\$20.00 **2 hour**

Slope and Rate of Change

\$10.00 per hour

x = hours worked
y = dollars earned
y = **10**x

rate of change
slope
m

Slope and Rate of Change

y = 10x

x	y
0	\$0
1	\$10
2	\$20
3	\$30

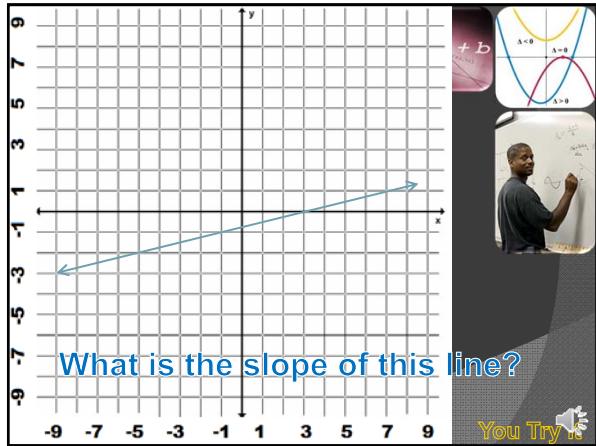
← runs +1

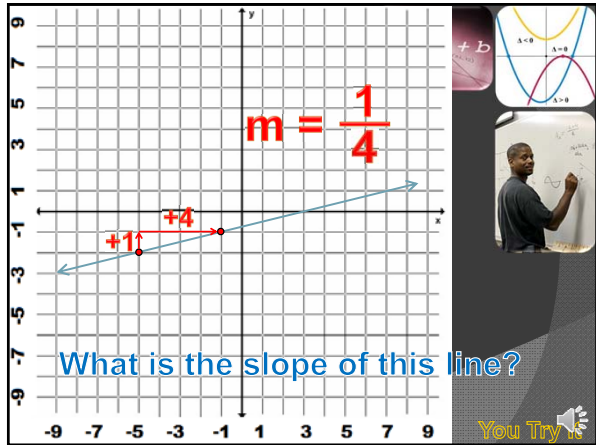
← rises +10

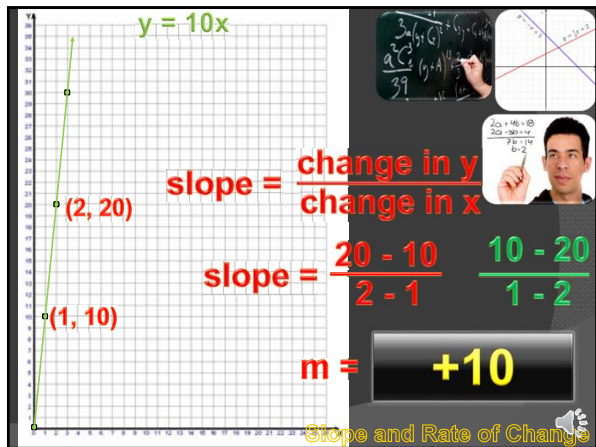
slope = $\frac{\text{rise}}{\text{run}}$

$m = \frac{10}{1}$

Slope and Rate of Change







$y = 10x$
 $y = 10x + 5$

Slope and Rate of Change

This slide features a coordinate plane with two lines: a green line $y = 10x$ and a red line $y = 10x + 5$. The red line is parallel to the green line and shifted upwards. In the top right, there are two small images: one of a hand writing on a chalkboard with the quadratic formula $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ and another of a man pointing at a whiteboard with the slope formula $m = \frac{y_2 - y_1}{x_2 - x_1}$. In the bottom right, there is a photograph of a woman kissing a baby on the cheek.

Positive Slope rises left to right
Negative Slope falls left to right

$\text{slope} = \frac{3}{-1} = -3$

Slope and Rate of Change

This slide shows a coordinate plane with a red line having a positive slope and a green line having a negative slope. A slope triangle is drawn on the red line, showing a vertical change of 3 and a horizontal change of -1. In the top right, there are two small images: one of a hand writing on a chalkboard with the quadratic formula and another of a man pointing at a whiteboard with the slope formula.

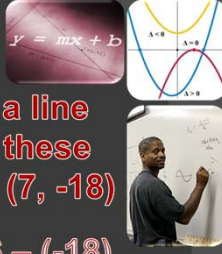
What is the slope of a line that passes through these two points: (3, -6) and (7, -18)

$y = mx + b$

You Try It!

This slide contains the text "What is the slope of a line that passes through these two points: (3, -6) and (7, -18)". It also features a small image of a man writing on a whiteboard. In the top right, there are two small images: one of a pink envelope with the equation $y = mx + b$ and another of a graph showing three parabolas with different discriminants: $\Delta < 0$, $\Delta = 0$, and $\Delta > 0$.

$y = mx + b$

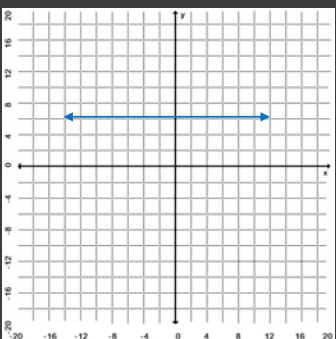
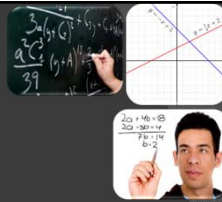


What is the slope of a line that passes through these two points: (3, -6) and (7, -18)

$$m = \frac{\text{change in } y}{\text{change in } x} = \frac{-6 - (-18)}{3 - 7}$$

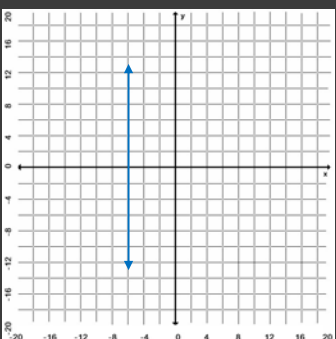
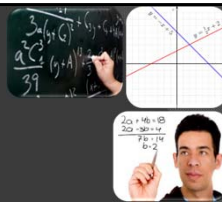
$$= \frac{-6 + 18}{3 - 7} = \frac{12}{-4} = -3$$

You Try!

$m = 0 \div 3 = 0$

Slope and Rate of Change

$m = \infty \div 0$
 $= \text{undefined}$

Slope and Rate of Change
