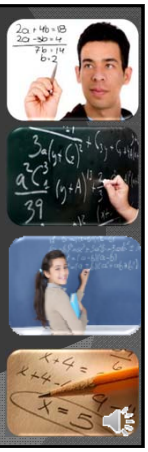
Algebra 1

Direct Variation and Function Notation



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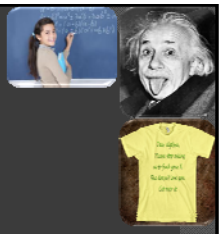
Direct Variation

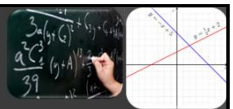
Constant of Variation

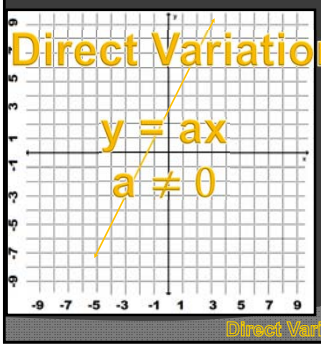
Function Notation



Overview

Slope-Intercept Form:
y = mx + b





Direct Variation

$y = ax$

$a \neq 0$

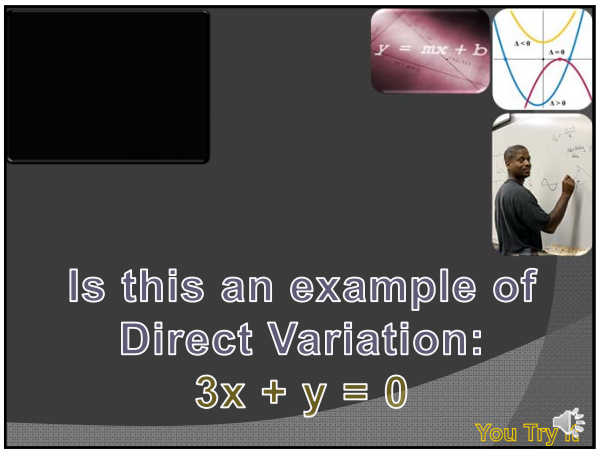
$y = 2x + 3$

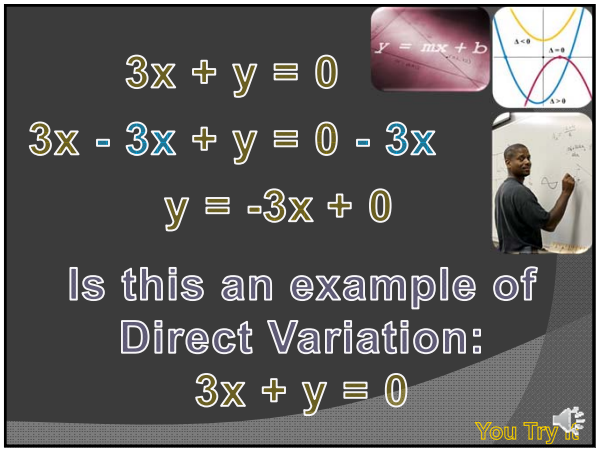
$y = 2x + 1$

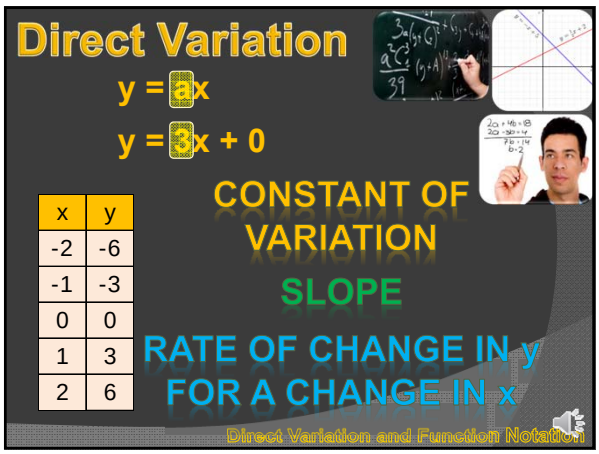
$y = 2x + 0$

$y = 2x$

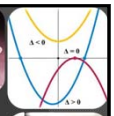
Direct Variation and Function Notation


Is this an example of
Direct Variation:
3x + y = 0
You Try it


3x + y = 0
3x - 3x + y = 0 - 3x
y = -3x + 0
Is this an example of
Direct Variation:
3x + y = 0
You Try it


Direct Variation
y = ax
y = 3x + 0
x y
-2 -6
-1 -3
0 0
1 3
2 6
CONSTANT OF VARIATION
SLOPE
RATE OF CHANGE IN y FOR A CHANGE IN x
Direct Variation and Function Notation

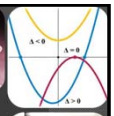
x	y
-1	-4
0	0
1	4
2	8
3	12
4	16




Is this a Direct Variation?
If so, what is the Constant of Variation?
What is the slope?
Write an equation that fits this data.

You Try It

x	y	
-1	-4	4x = y 2x - 2 = y
0	0	4x = y
1	4	4x = y
2	8	4x = y
3	12	4x = y
4	16	4x = y

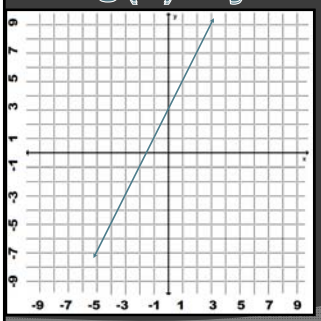


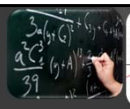
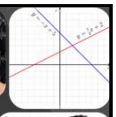

y = 4x

Is this a Direct Variation?
If so, what is the Constant of Variation?
What is the slope?
Write an equation that fits this data.

You Try It

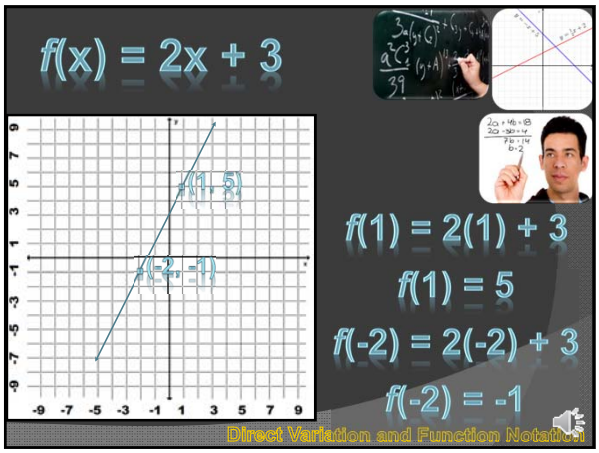
Function Form
g(x) = y

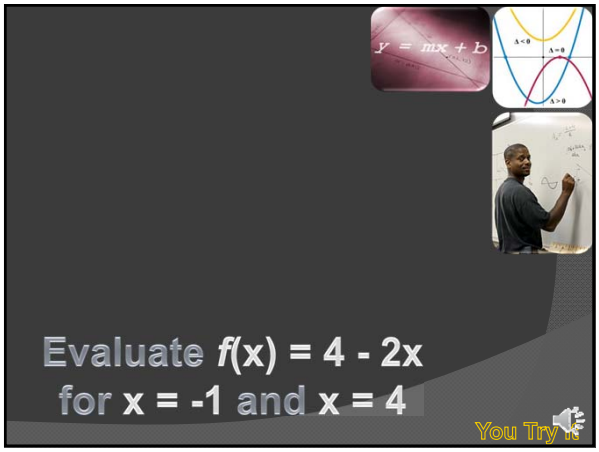


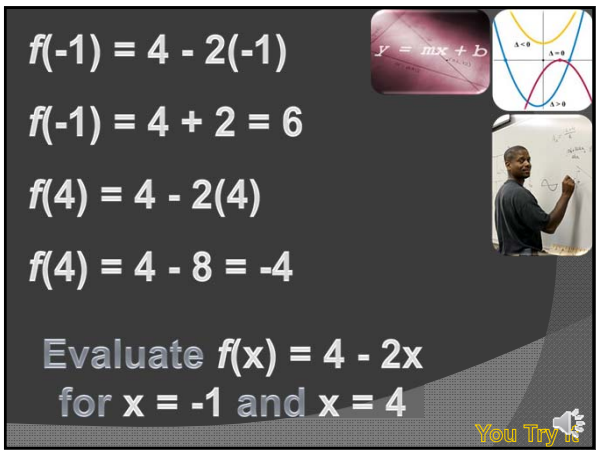




f(x) = 2x + 3

Direct Variation and Function Notation


f(x) = 2x + 3
(1, 5)
(-2, -1)
f(1) = 2(1) + 3
f(1) = 5
f(-2) = 2(-2) + 3
f(-2) = -1
Direct Variation and Function Notation


y = mx + b
Evaluate f(x) = 4 - 2x
for x = -1 and x = 4
You Try It


f(-1) = 4 - 2(-1)
f(-1) = 4 + 2 = 6
f(4) = 4 - 2(4)
f(4) = 4 - 8 = -4
y = mx + b
Evaluate f(x) = 4 - 2x
for x = -1 and x = 4
You Try It