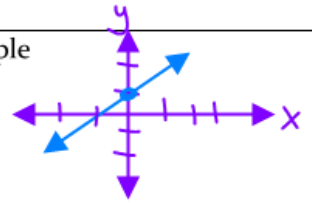
Lesson 8-2

slope	Decode sl•ope
Definition $\frac{\text{rise}}{\text{run}} = \frac{\text{rise w/ the y's}}{\text{run w/ the x}}$	Example

y-intercept "b"	Decode y-in•ter•cept
Definition Where a line crosses the y-axis	Example  y-int = 1

slope-intercept form	Decode sl•ope in•ter•cept form
Definition $y = mx + b$ (m: slope, b: y-int.)	Example $y = \frac{1}{2}x + 6$ $m = \frac{1}{2}$ $b = 6$

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$y = mx + b$

Example 1: Identifying Slope and y-intercept

Identify the slope and y-intercept of each equation.

I Do	We Do	You Do
$y=3x+4$ $m = 3$ $b = 4$	$y=\frac{2}{3}x+7$ $m = 2/3$ $b = 7$	$y=-4x-11$ $m = -4$ $b = -11$

Example 2: Writing Equations in Slope-Intercept Form

Write the equation in slope-intercept form with the given slope and y-intercept.

$y = mx + b$

I Do	We Do	You Do
slope = -7 y-intercept = 3 $y = -7x + 3$	slope = $\frac{2}{3}$ y-intercept = -4 $y = 2/3x - 4$ or $y = 2/3x + -4$	slope = -12 y-intercept = -18 $y = -12x - 18$ or $y = -12x + -18$

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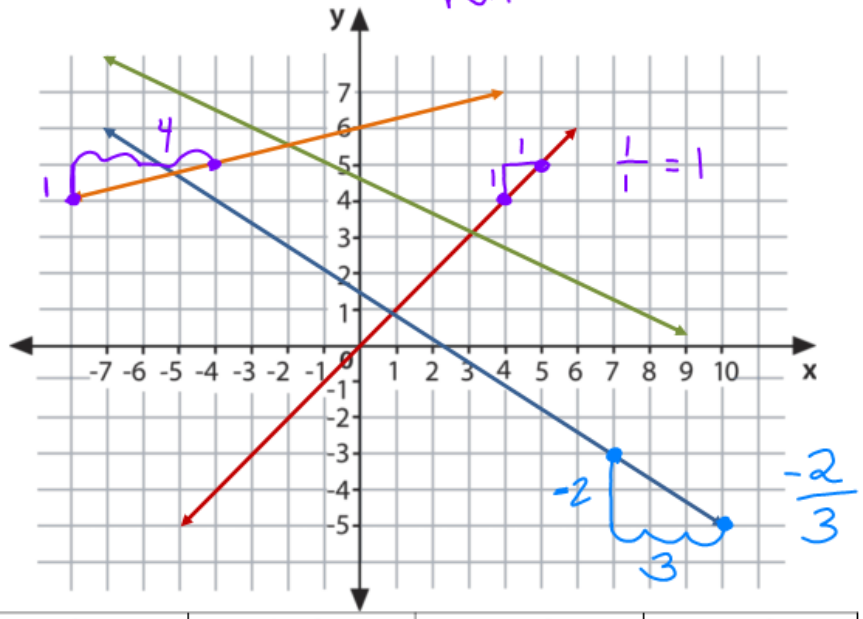
Example 3: Finding Slope of a Line

Find the slope of the line.

rise / run



I Do	We Do	You Do	You Do
positive Red $m = 1$	negative Blue $m = -\frac{2}{3}$	negative Green $m = -\frac{1}{2}$	positive Orange $m = \frac{1}{4}$

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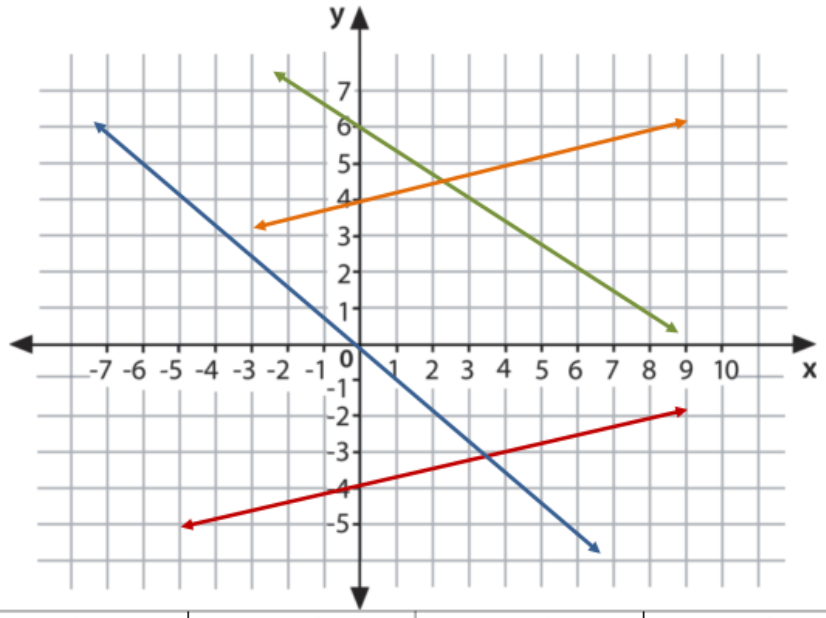
Example 4: Writing an Equation from a Graph

Write an equation in slope-intercept form for each line.



I Do	We Do	You Do	You Do
Red	Blue	Green	Orange

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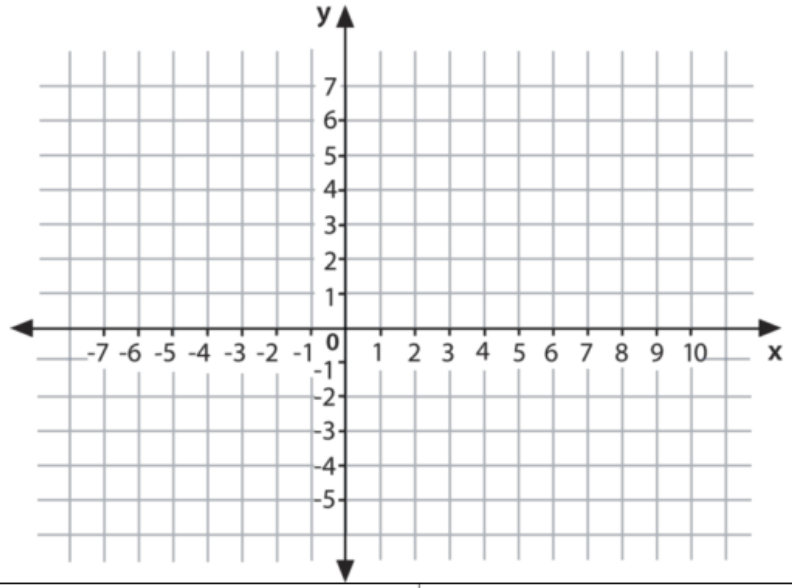
Example 5: Graphing an Equation in Slope-Intercept Form



I Do	We Do
$y = -3x + 2$	$y = \frac{1}{3}x - 6$

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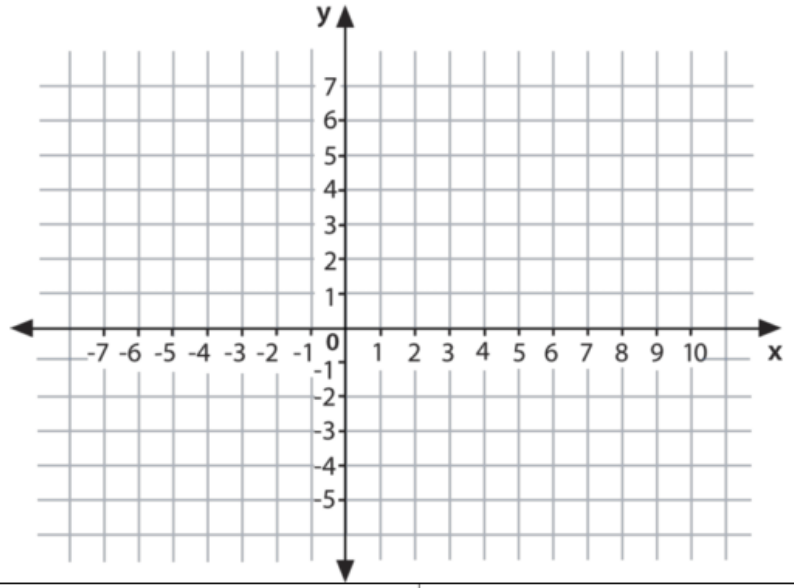
Example 5: Graphing an Equation in Slope-Intercept Form



We Do	You Do
$y = -4x + 7$	$y = \frac{2}{5}x - 1$

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positive & negative slope	Decode
Definition	Example

zero slope	Decode
Definition	Example

undefined slope	Decode
Definition	Example

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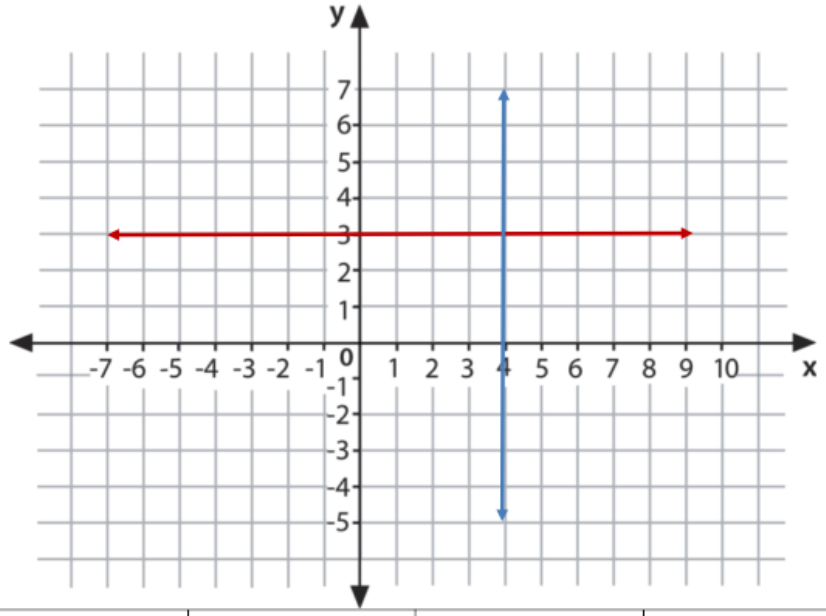
Example 6: Finding Slope of a Line

Find the slope of the line.



I Do	We Do	We Do	We Do
Red	Blue	Draw a line with zero slope at y=4	Draw a line with undefined slope at x=-6

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slope formula	Decode
Definition	Example

Example 7: Finding Slope Using Two Points

I Do	We Do	We Do
(2, 4) and (1, 3)	(4, -6) and (1, 3)	(1, 7) and (9, 1)

You Do	You Do	You Do
(-2, -3) and (4, 6)	(-5, -4) and (-8, -6)	(-8, -2) and (7, 8)