Algebra 1 4.1

Write and graph linear equations in slope-intercept form.

Model data with equations in slope-intercept form

linear

slope

y-intercept

y=mx+b

constant function

$y = 3$ $x = 2$

Song Horz. vert.

Whiteboards

$y = mx + B$

slope y.int

$y = \frac{1}{2}x + -6$

KeyConcept Slope-Intercept Form

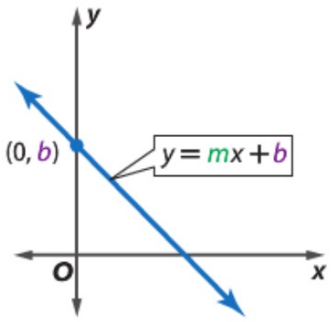
Words The slope-intercept form of a linear equation is $y = mx + b$, where m is the slope and b is the y-intercept.

Example

$$y = mx + b$$

$$y = 2x + 6$$

slope — y-intercept



$y = mx + B$

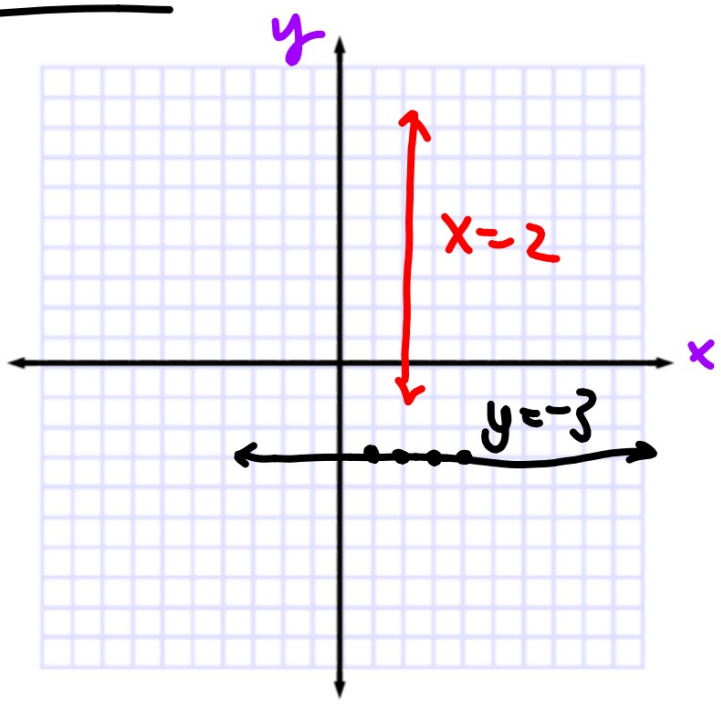
Example 3 Graph Linear Equations

Graph $y = -3$.

$x = 2$

1	−3
2	−3
3	−3
4	−3

2
2
2
2

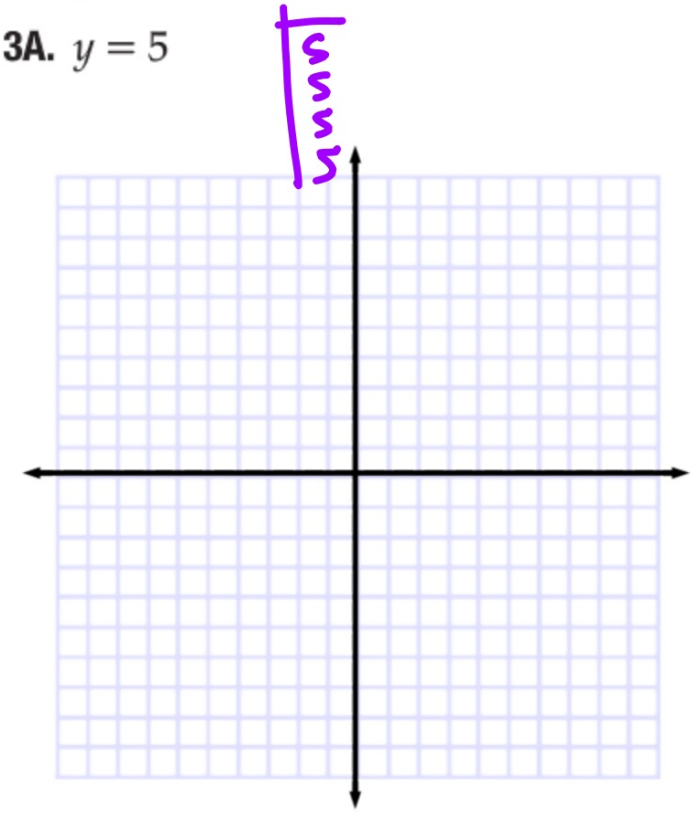


Bicycles: constant slope
y = constant describes vertical distance (x,y)
so y= 2 would be always "up 2" etc.

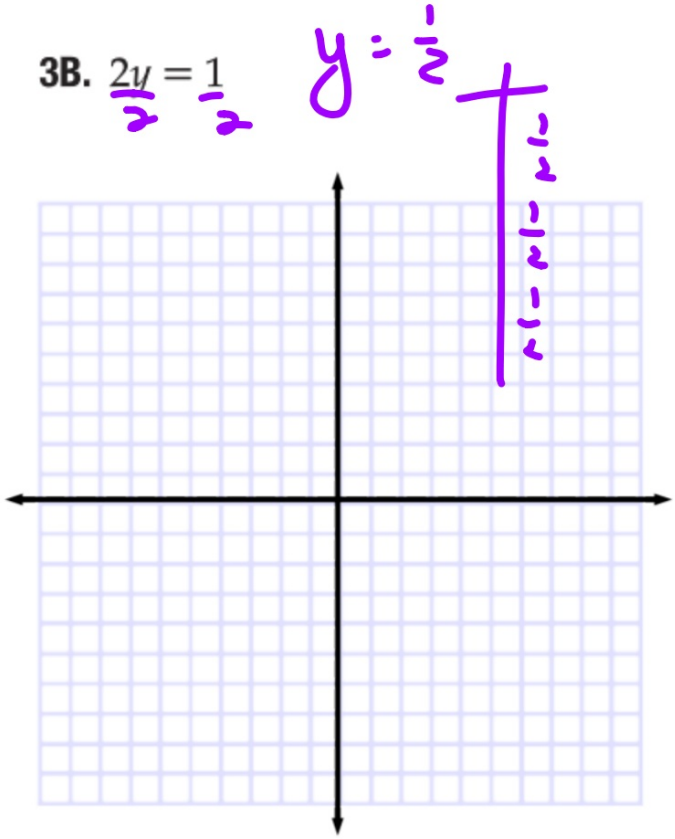
GuidedPractice

Graph each equation.

3A. $y = 5$



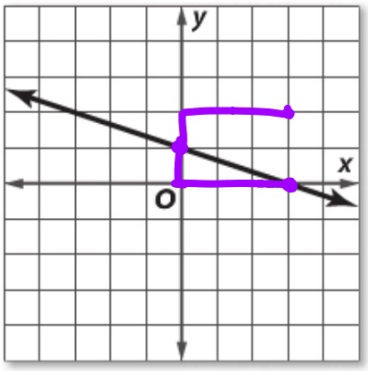
3B. $2y = 1$



What do we need to know?

Standardized Test Example 4 Write an Equation in Slope-Intercept Form

Which of the following is an equation in slope-intercept form for the line shown?



A $y = -3x + 1$

B $y = -3x + 3$

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

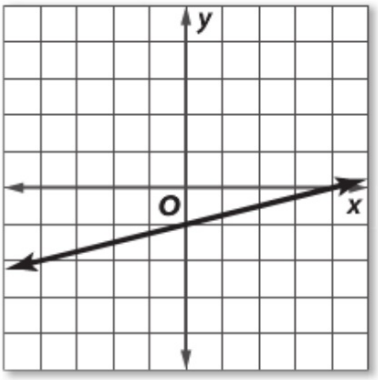
D $y = -\frac{1}{3}x + 3$

$y = mx + B$

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

GuidedPractice

4. Which of the following is an equation in slope-intercept form for the line shown?



F $y = \frac{1}{4}x - 1$

G $y = \frac{1}{4}x + 4$

H [illegible]

I [illegible]

$y = mx + B$

$y = \frac{1}{4}x + -1$