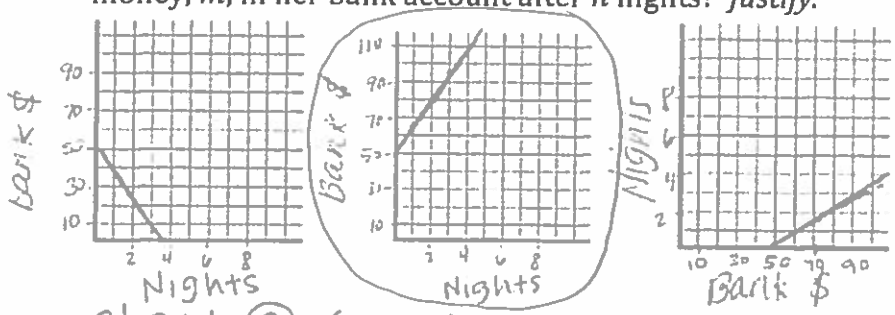
Multiple Choice Practice - Slope Intercept Form

1) Briana starts with $50 in her savings account. She earns $15 per night house-sitting for a neighbor who is out of town. Briana deposits all her money and makes no withdrawals. Which graph best describes the amount of money, m, in her bank account after n nights? *Justify.*



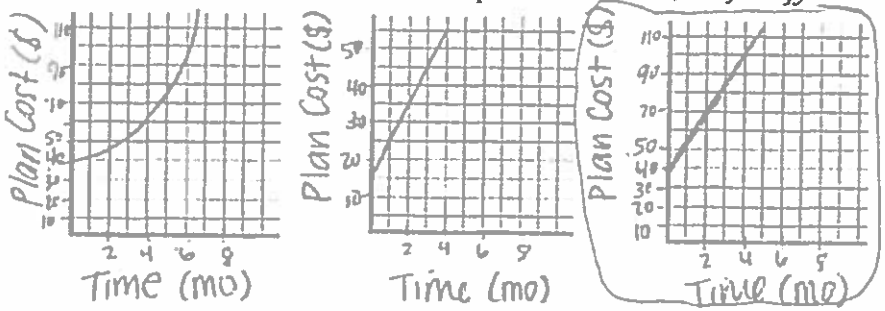
- start @ (0,50) not (50,0)
- m is increasing b/c she deposits money

Which equation best describes the scenario?

(a) $m = 50 + 15n$ (b) $n = 50 + 15m$ (c) $m = 15 + 50n$

m is dep, n is indep

2) A cell phone plan costs $40 to buy a new phone and then $15 per month for unlimited texting. Which graph describes the cost, C, of the plan over time, t? *Justify.*



- start @ (0,40)
- m is $\frac{15}{1}$ b/c $15 per month + is constant

Which equation best describes the scenario?

(a) $C = 15m + 40$ (b) $C = 40m + 15$ (c) $C = 55m$

variable term, constant term

Name Teacher 5.2 + 5.4 Pd

Linear Equations: Slope-Intercept Form

$y = mx + b$

variable term, constant term

slope
- rate of change
- $\frac{\text{rise}}{\text{run}}$ - "per" - "every"

y-intercept
- where line crosses y-axis
- where $x = 0$
- starting point

What information can we find out about a line from this form?

1) $y = 3x - 5$

$m = 3$: increasing, steep

$b = -5$: y-int @ $(0,-5)$

2) $y = -\frac{2}{3}x + 4$

$m = -\frac{2}{3}$: decreasing, less steep

$b = 4$: y-int @ $(0,4)$

Write the slope-intercept form of the linear equation given the information.

3) $m = 2, b = -4$

$y = 2x - 4$

4) The slope of the line is $-\frac{5}{3}$ and the y-intercept is at $(0,-1)$.

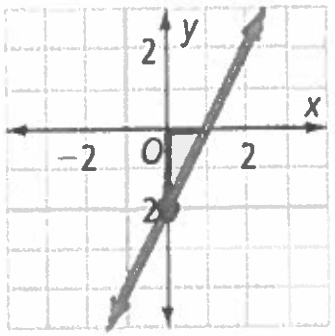
$y = -\frac{5}{3}x - 1$

5) line passes through (y-int) $(0,3)$ and $(5,-1)$

$m = \frac{-1-3}{5-0} = -\frac{4}{5}$ $y = -\frac{4}{5}x + 3$

Write Slope-Intercept Form Linear Equations from Graphs

1)



$b = -2$

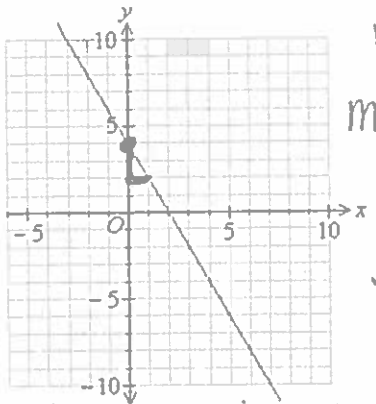
m = up 2, right 1

$m = \frac{2}{1}$

$y = 2x - 2$

increasing, steep, crosses y-axis @ (0,-2)

2)



$b = 4$

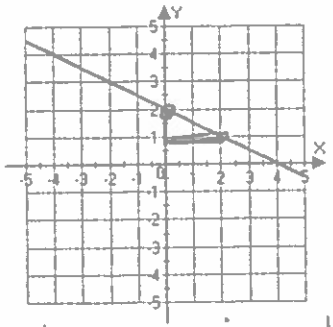
m = down 2, right 1

$m = -\frac{2}{1}$

$y = -2x + 4$

decreasing, steep, crosses y-axis @ (0,4)

3)



$b = 2$

m = down 1, right 2

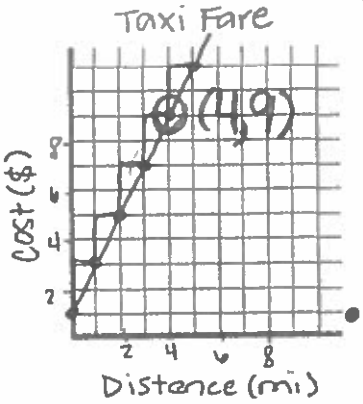
$m = -\frac{1}{2}$

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

decreasing, less steep, crosses y-axis @ (0,2)

Slope-Intercept Form in Real Life & Graphing

1) A taxi charges an initial fee of $1. The taxi also charges $2 for every mile traveled. Model the scenario with a graph and equation.



y: cost x: distance

b is @ (0,1)

m is $2/mi = $\frac{2}{1}$ = up 2, right 1

$y = 2x + 1$

- cost of 4-mi ride?

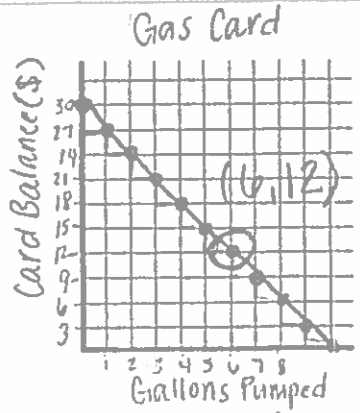
$y = 2(4) + 1 = \$9$

(4,9)

Steps to Write the Equation

1) Define your variables:	2) Identify your starting point.	3) Identify your rate of change.	4) Write your equation in slope-intercept form.
x: indep. y: dep.	y-int, b	slope, m	$y = mx + b$

2) A woman puts $30 on a gift card for gas. Gas costs $3 per gallon. Model the scenario with a graph and an equation.



y: card balance

x: gallons pumped

b is @ (0,30)

m is -$3/gal = $\frac{-3}{1}$ = down 3 right 1

$y = -3x + 30$

- how much on card after 6 gal?

$y = -3(6) + 30 = \$12$ (6,12)