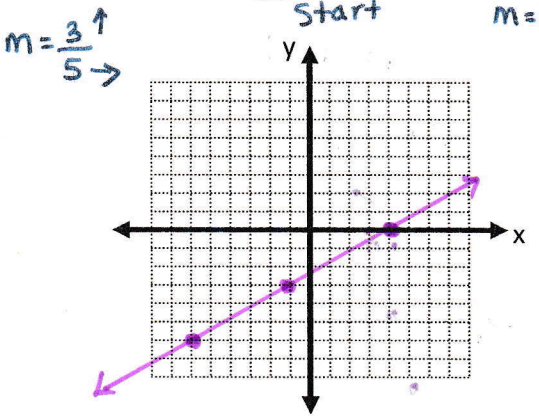
slope pos # /
neg # \

GRAPHING IN POINT SLOPE FORM

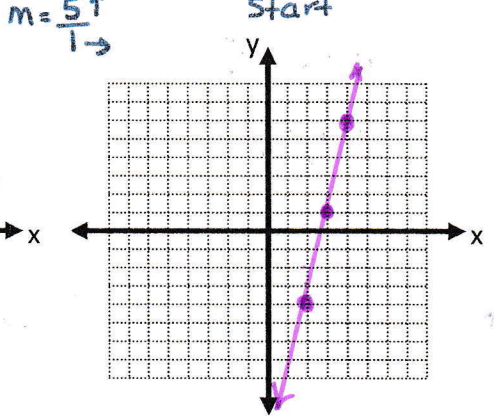
Unit 3

Given the slope and a point graph each of the following.

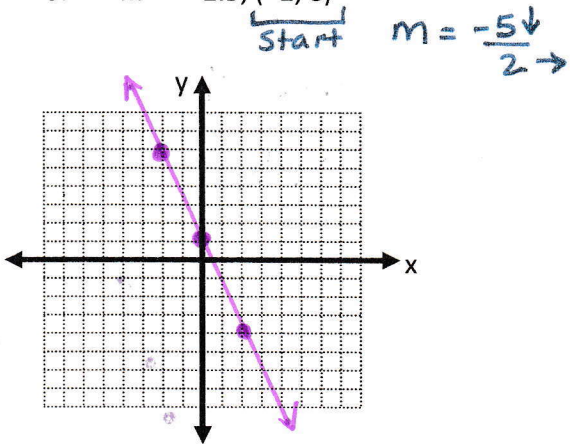
1. $m = \frac{3}{5}$; (–1, – 3) Start



2. $m = 5$; (2, – 4) Start

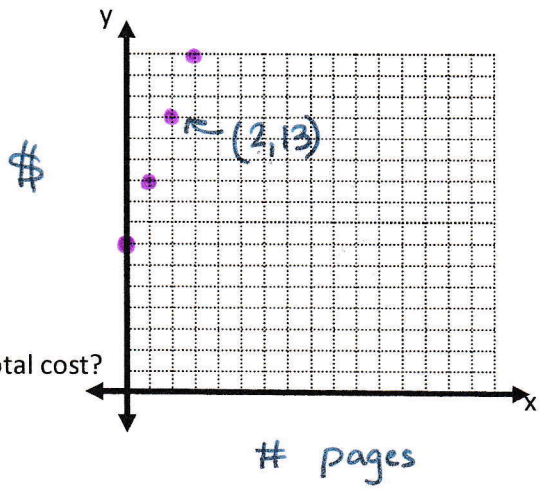


3. $m = -2.5$; (–2, 6) Start



4. Laverne and Shirley are making a scrapbook. The book costs $7 and supplies for each page are $3. To calculate the cost for any number of pages, each girl wrote an equation.

Laverne: y = 3x + 7 **Shirley:** y – 13 = 3(x – 2)



a. Using Laverne's equation, find the cost for 10 pages. x = 10

$y = 3(10) + 7$
$= 30 + 7$
$= \$37$

b. Using Shirley's equation, find the cost for 10 pages. x=10

$y - 13 = 3(10-2)$
$y - 13 = 3(8)$
$y - 13 = 24 + 13$ $y = \$37$

c. Is it possible to use both equations to accurately calculate the total cost? Explain. yes, they both work.

d. Graph the line represented by Laverne's equation.

b = 7 $m = \frac{3}{1}$ ↑ →

e. Is the point (2, 13) on the graph?

yes

f. How does the point (2, 13) relate to Shirley's equation?

They are in the equation but with opposite sign.

Shirley's equation was in a form called "point-slope".

point–slope form: $y - y_1 = m(x - x_1)$

m = slope

(x_1, y_1) = point

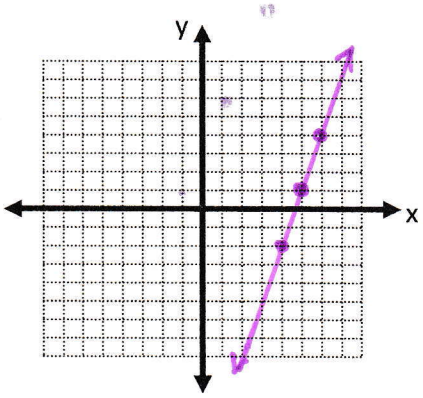
Write down x_1 & y_1 with opposite signs.

Given point–slope form, identify the slope and the point, and then graph each of the following.

5. $y - 1 = 3(x - 5)$

slope $m = 3$ $\frac{3}{1}$

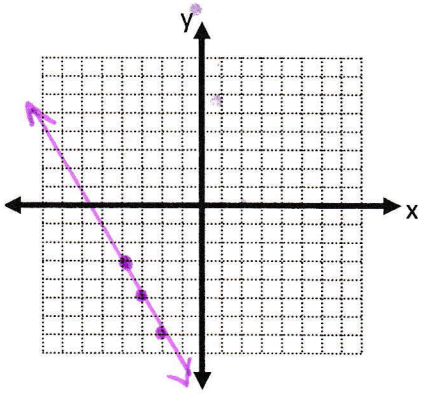
point $(5, 1)$



6. $y + 3 = -2(x + 4)$

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

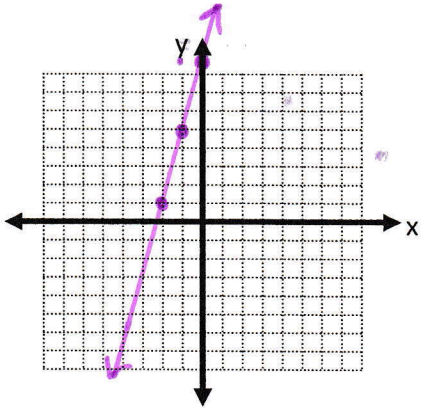
point $(-4, -3)$



7. $y - 5 = 4(x + 1)$

slope $m = 4$ $\frac{4}{1}$

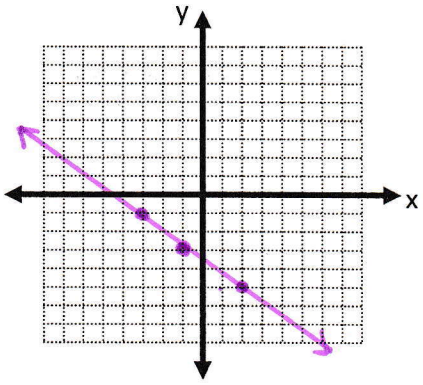
point $(-1, 5)$



8. $y + 3 = \frac{-2}{3}(x + 1)$

slope $m = \frac{-2}{3}$

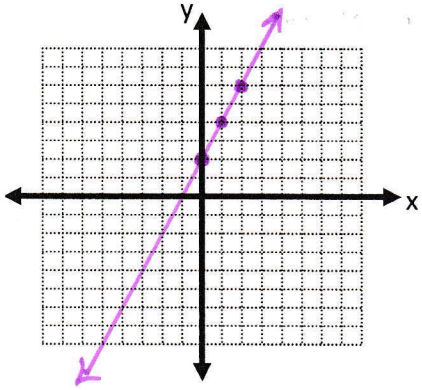
point $(-1, -3)$



9. $y - 2 = 2(x + 0)$

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

point $(0, 2)$



$y - 0 = 3(x - 0)$

10. $y = 3x$

slope $m = 3$ $\frac{3}{1}$

point $(0, 0)$