

3.5 SLOPE-INTERCEPT FORM

$$y = mx + b$$

↑ slope
↑ y-intercept

Example:
 $y = 2x + 3$
 slope = 2 or $\frac{2}{1}$
 y-intercept = (0, 3)

Sep 23-8:49 PM

Find the slope and y-intercept.

$$y = -2x + 7$$

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

$$b = (0, 7)$$

$$2x + y = -3$$

~~2x~~
~~-2x~~

$$y = -2x - 3$$

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

$$b = (0, -3)$$

Sep 23-9:35 PM

Find the slope and y-intercept.

$$12x + 4y = 8$$

~~12x~~ ~~4y~~

$$\frac{4y}{4} = \frac{-12x + 8}{4}$$

$$y = -3x + 2$$

$m = \frac{-3}{1} \quad b = (0, 2)$

$$5x - 3y = 6$$

~~5x~~ ~~-3y~~

$$-3y = -5x + 6$$

$$y = \frac{5}{3}x - 2$$

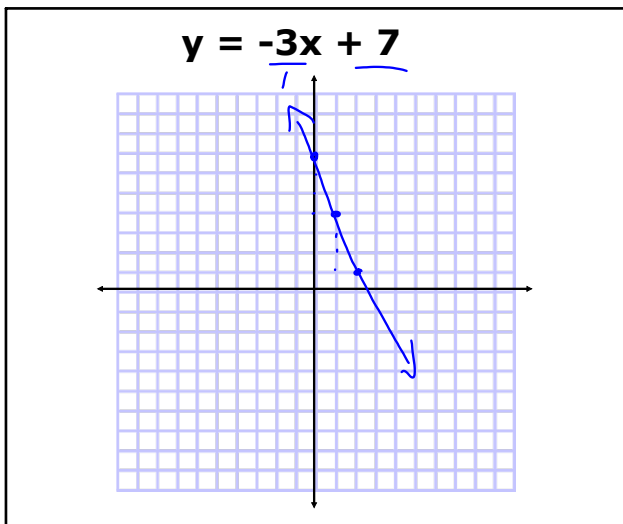
$m = \frac{5}{3} \quad b = (0, -2)$

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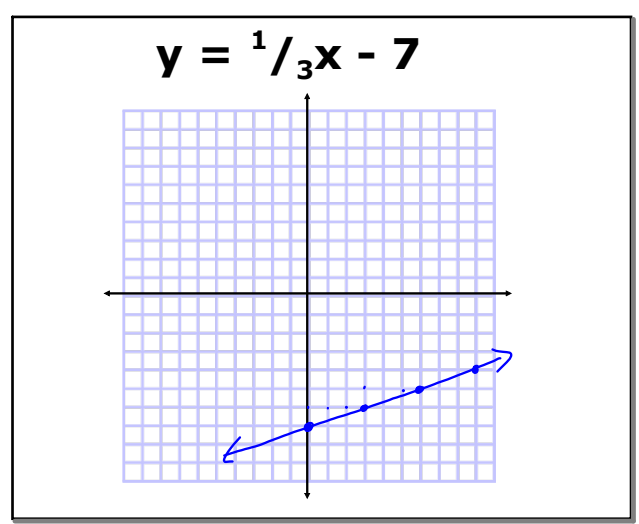
How to graph an equation using slope-intercept form :

- Step 1:** Write the equation in slope-intercept form.
- Step 2:** Plot the y-intercept.
- Step 3:** Locate more points using slope (rise over run).
- Step 4:** Draw a line through the three points.

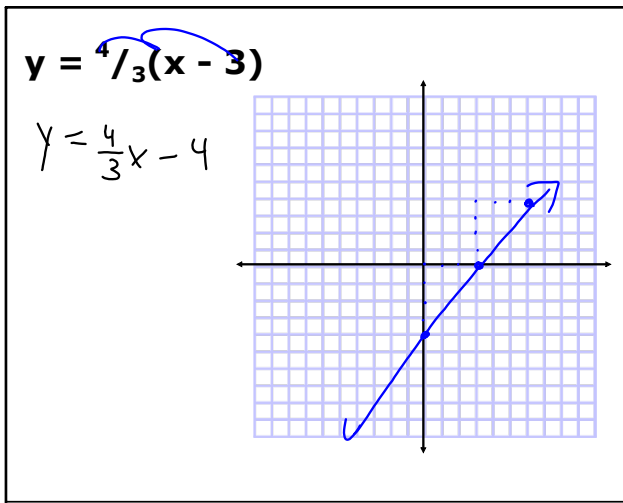
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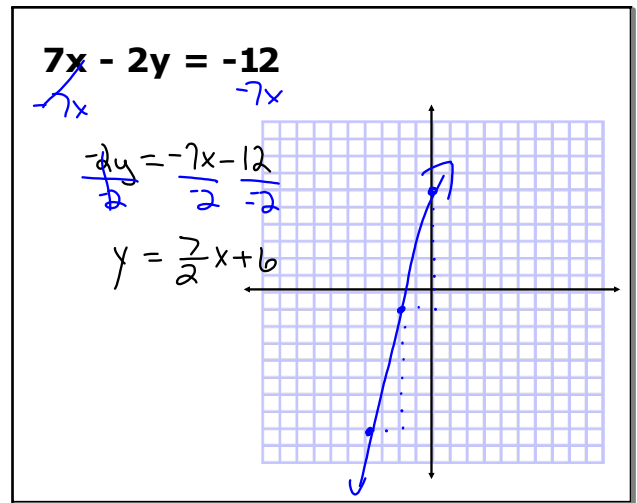
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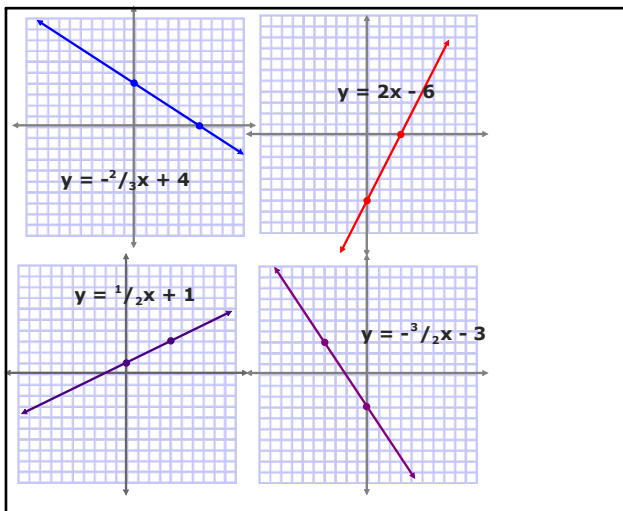
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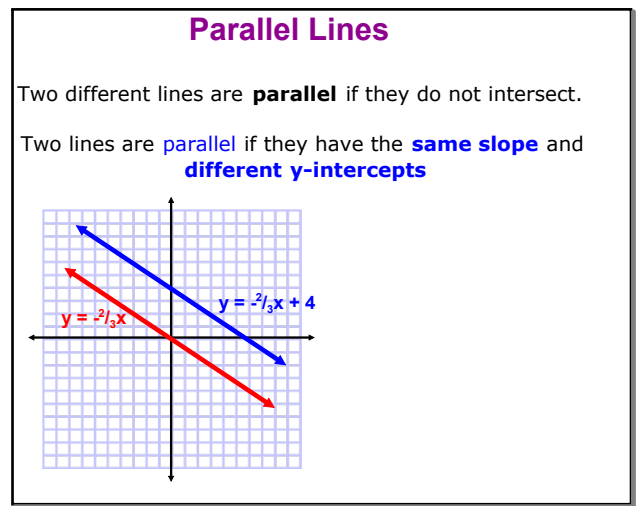
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Feb 26-6:07 PM



Oct 6-5:01 AM

Line p_1 passes through $(0, -3)$ & $(1, -2)$.

Line p_2 passes through $(5, 4)$ & $(-4, -4)$.

Line p_3 passes through $(-6, -1)$ & $(3, 7)$.

Find the slope of each line. Which lines are parallel?

slope of $p_1 = \frac{-2 - (-3)}{1 - 0} = \frac{1}{1} = 1$

slope of $p_2 = \frac{-4 - 4}{-4 - 5} = \frac{-8}{-9} = \frac{8}{9}$

slope of $p_3 = \frac{7 - (-1)}{3 - (-6)} = \frac{8}{9}$

p_2 and p_3

Feb 19-1:04 PM

Are the lines of $4y = -5x + 12$ and $y = \frac{4}{5}x - 8$ parallel? Explain.

$\frac{4y}{4} = \frac{-5x + 12}{4}$

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

$m = -\frac{5}{4}$

$y = \frac{4}{5}x - 8$

$m = \frac{4}{5}$

No

Oct 7-6:55 PM

Are the lines parallel? Explain.
 $y = \frac{3}{4}x + 7$ and $4x - 3y = 9$

$m = \frac{3}{4}$

$\frac{-3y}{-3} = \frac{-4x + 9}{-3}$

$y = \frac{4}{3}x - 3$

$m = \frac{4}{3}$

No

Oct 14-1:04 PM

Are the lines parallel? Explain.
 $6y = -x + 6$ and $y = -\frac{1}{6}x + 6$

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

$m = -\frac{1}{6}$

$m = -\frac{1}{6}$

yes

Mar 8-10:09 AM

Classwork: p.185 #4 - 36 even
 20-28 (graph paper)
 ☆ Copy the questions.

Final Five
 Find the slope and the y-intercept.

1. $y = -3x - 2$ 2. $y - 9x = 2$ 3. $2y - 3x = 6$

Oct 8-12:21 PM