

Algebra II

3-2

Graphing using

$$y = mx + b$$

Which of the following equations will graph into a straight line?

- 1) $y = \frac{1}{3}x - \frac{4}{5}$ Yes
- 2) $y = x^2 - 4$ No, parabola
- 3) $x = 3$ Yes
- 4) $3x + 2y = 13$ Yes
- 5) $x^2 + y^2 = 49$ No, circle
- 6) $y = \sqrt{2x - 1}$ No
- 7) $y = -1$ Yes
- 8) $y = |x + 2|$ No V-shape

How can we tell if an equation will graph into a straight line by just looking at the equation?

No junk around the x or y

Slope/Intercept form of a line -

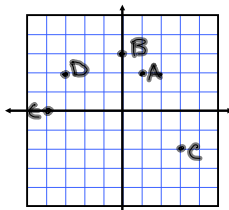
$$y = mx + b$$

↗ y-intercept
point where the line
crosses the y-axis.
starting point

↘ slope = $\frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{\Delta y}{\Delta x}$

For each exercise, graph the ordered pairs in the same coordinate plain. (pg 111)

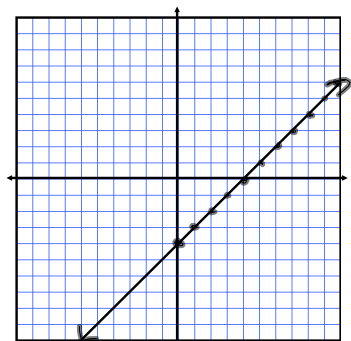
- 1) A (1, 2)
- B (0, 3)
- C (3, -2)
- D (-3, 2)
- E (-4, 0)



Graph each equation.

5) $x - y = 4$

$$1x - 4 = y$$
$$m = 1 \quad b = -4$$
$$= \frac{1}{1}$$



Graph each pair of equations in the same coordinate plane.
 Find the coordinates of the point where the graphs intersect.
~~Then show by substitution that the coordinates satisfy both equations.~~

27) $2x + 5y = 0$
 $2x + y = 8$
 $2x + 5y = 0$
 $5y = -2x$
 $y = -\frac{2}{5}x$
 $m = -\frac{2}{5}$ $b = 0$
 $2x + y = 8$
 $y = -2x + 8$
 $m = -2$ $b = 8$

Graph each equation.

33) $y = |x|$

$y = mx + b$ doesn't work because it is not linear.

$(0, 0)$
 $(1, 1)$
 $(2, 2)$
 $(-1, 1)$
 $(-2, 2)$

Assignment:

Pg. 111
 4 - 38 even

(16 Graphs)
 Need: 2 sheets of graph paper