Section 5-5
Standard Form

Students will be able to
-graph linear equations using intercepts
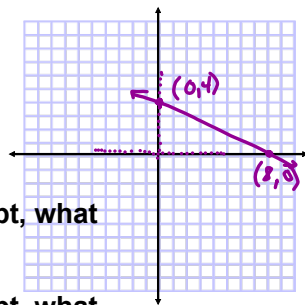-write linear equations in standard form

Aug 18-2:52 PM

Recall that you only need 2 points to graph a line.
-2 points can be given
-can be slope and y-intercept
-can be a point on the line and the slope.
-can also be where the lines cross the x-axis and the y-axis.

This last one is called finding the intercepts.

Aug 18-2:52 PM

What are the x- and y- intercepts?

(0,4)
(8,0)

To find the x-intercept, what is always the same? $y=0$
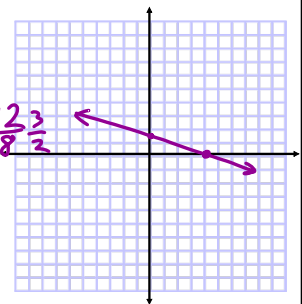
To find the y-intercept, what is always the same? $x=0$

Aug 18-2:52 PM

What are the intercepts of the following? Use them to graph the line.

$3x + 8y = 12$

x-int:
$\frac{3x + 8(0)}{3} = \frac{12}{3}$
$x = 4$
$(4,0)$

y-int:
$\frac{3(0) + 8y}{8} = \frac{12}{8}\frac{3}{2}$
$(0, 1.5)$

Aug 18-2:52 PM

$3x + 8y = 12$ is in Standard Form.

The Standard Form of a Linear Equation:
$*$ Ax + By = C

1. A and B cannot both be 0
$*$ 2. uses only integers _no fraction/decimals_
3. A needs to be positive

Aug 18-2:52 PM

Put into standard form.

$y - 2 = \frac{1}{3}(x + 6)$

$Ax + By = C$

$y - 2 = \frac{1}{3}x + 2$
$+2 \qquad +2$
$y = \frac{1}{3}x + 4$
$-\frac{1}{3}x \quad -\frac{1}{3}x$

$-1(-\frac{1}{3}x + y = 4)$
$3(\frac{1}{3}x - y = -4)$
$x - 3y = -12$

x-int
$(-12,0)$

y-int
$(0,4)$

Aug 18-2:52 PM

1

Put into standard form:

$(4, 7)$ $(-2, 2)$

$y - 7 = \frac{5}{6}(x - 4)$

$m = \frac{7-2}{4+(2)} = \frac{5}{6}$

$y - 7 = \frac{5}{6}x - \frac{10}{3} + \frac{21}{3}$

$-\frac{5}{6}x + y = \frac{11}{3}$ $\Rightarrow$ $5x - 6y = -22$

Graph the following.

$y = 4$ $x = -2$

Aug 18-2:52 PM

A festival sells ride tickets for 50 cents each and game tickets for 20 cents each. You have $5 to spend on tickets at the festival. Write and graph an equation that describes the items you can purchase. What are 3 combinations of tickets you can get?

$50x + 20y = 500$

10 rides
or
25 games

$\frac{300}{20} = $ (4 rides
15 games)

Aug 18-2:52 PM

Hwk:
pg. 326 - 328
#12 - 20 (4th), 23, 24, 27, 28,
32 - 38 evens, 42, 52, 56, 58, 62,
63, 73, 74

Aug 18-2:52 PM