Warm-Up

Write, in detail, the steps for creating a peanut butter and jelly sandwhich (As if you were explaining to someone who did not know)

HW #1 Answers

ANSWER KEY

1. x = -24
2. x = 1/3
3. x = 7/9
4. x = -84
5. $635,000
6. $x \geq 3$
7. $x \leq 0$
8. 13 games; No, you have .25 left
9) $x = 7 \text{ or } x = -2$
10) $x = \frac{81}{2}$ or $x = -\frac{27}{2}$
11) $x \leq -\frac{7}{3} \text{ or } x \geq 9$
12) $-112 < x < 32$

Objective: Today will we continue to review topics from algebra 1 to refresh our memories.

Agenda:

- Warm -up
- Review of graphing and writing linear equations, and systems of equations
- Packet

A car salesman earns a base salary of $20,000 per year in addition to 9% of the total amount of his sales per year. If he earned $53,435 in a year, what was the total amount of the cars he sold?

$$20{,}000 + .09s = 53{,}435$$

$$\frac{.09s}{.09} = \frac{33{,}435}{.09}$$

$$s = 371{,}500$$

Graphing Equations and Inequalities

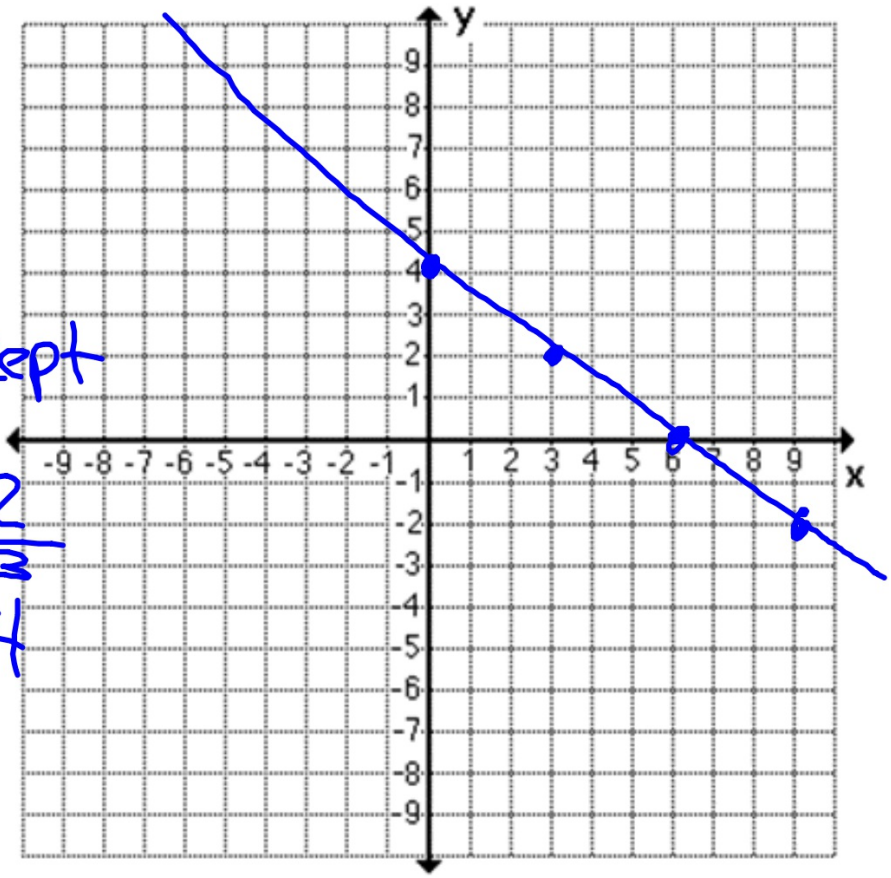
$2x + 3y = 12$

$y = mx + b$

Slope-Intercept

$\frac{3y}{3} = \frac{-2x}{3} + \frac{12}{3}$

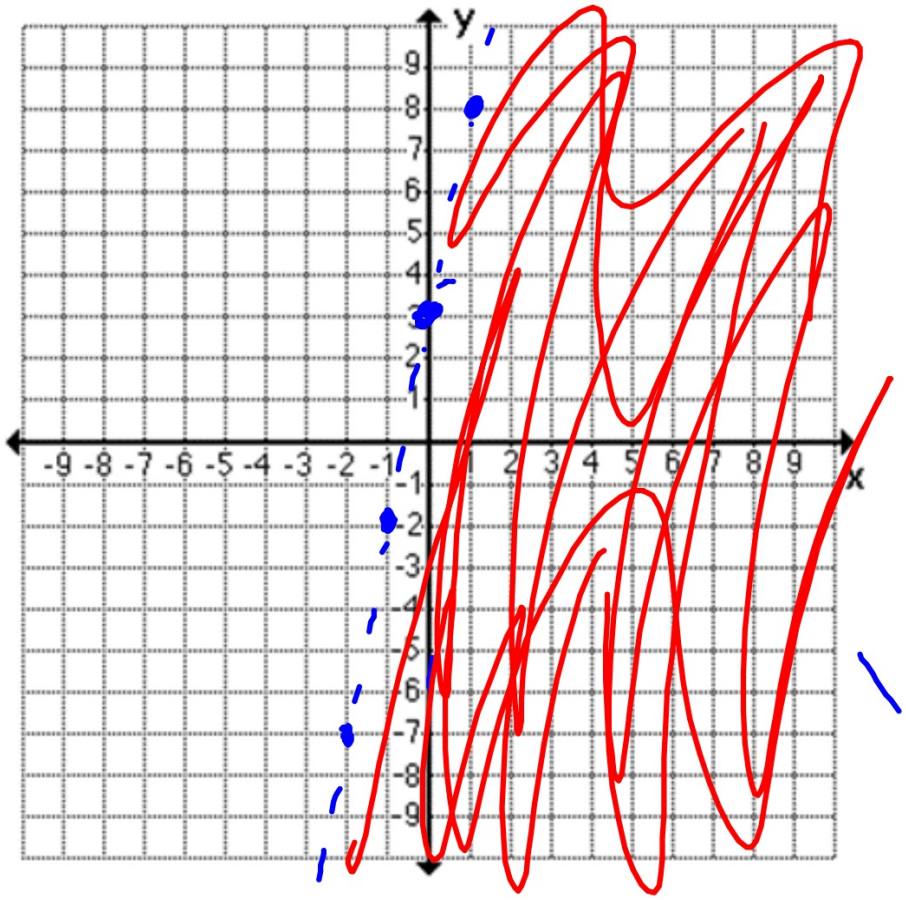
$y = -\frac{2}{3}x + 4$



Graphing Equations and Inequalities

$y - 5x < 3$

$y < 5x + 3$



Graphing Equations and Inequalities

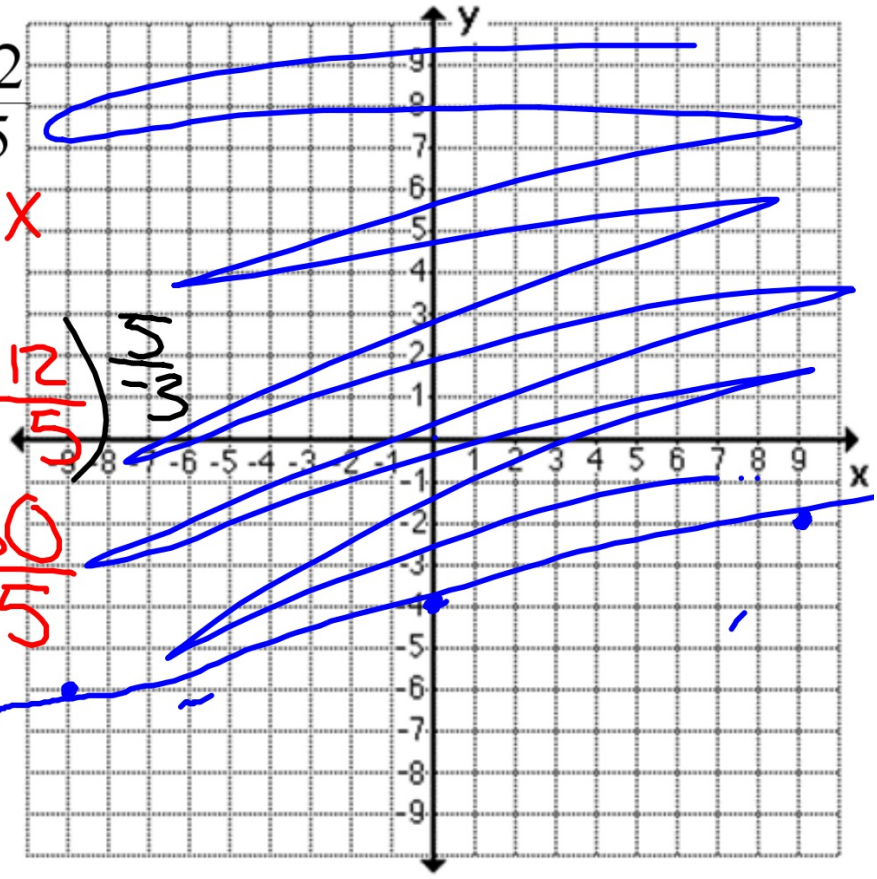
$$\frac{2}{15}x - \frac{3y}{5} \leq \frac{12}{5}$$

$-\frac{2}{15}x$ $\quad -\frac{2}{15}x$

$\frac{-3y}{5} \leq \left(\frac{-2}{15}x + \frac{12}{5}\right)\frac{5}{-3}$

$y \geq \frac{10}{45}x - \frac{60}{15}$

$y \geq \frac{2}{9}x - 4$



You have $10 to spend on candy. Gummi bears are $1.75 per bag and m+ms are $1.20 per bag.

Write a linear inequality in two variables to represent how many bags of each type of candy you can buy.

$1.75G + 1.20m \leq 10$

Writing Equations of lines

1. What is the slope and y-intercept of $5x + 7y = 28$

$7y = -5x + 28$

$y = -\frac{5}{7}x + 4$

Slope: $-\frac{5}{7}$

Y-Int: 4

2. Write an equation with a slope of 4 and a y intercept of -9

$y = 4x - 9$

3. Write an equation of the line that has a slope of 7 and goes through the point (3, -2)

x_1 y_1

Point Slope

$$y - y_1 = m(x - x_1)$$

$$y - (-2) = 7(x - 3)$$

$$y + 2 = 7(x - 3)$$

$$y + 2 = 7x - 21$$

$$\boxed{y = 7x - 23}$$

Write an equation of a line that goes through the points (5,-3) and (8, 9)

$$\frac{y_2 - y_1}{x_2 - x_1} = m \text{ (slope)}$$

$$m = \frac{9-(-3)}{8-5}$$

$$m = \frac{12}{3}$$

$$m = 4$$

$$y + 3 = 4(x - 5)$$

$$y + 3 = 4x - 20$$

$$y = 4x - 23$$

Remember!

Parallel lines have the same slope

Perpendicular lines have negative reciprocal (opposite) slopes

Write the equation of a line that is perpendicular to $y = 4x + 6$ and contains the point $(8, -3)$

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

$y + 3 = -\frac{1}{4}(x - 8)$

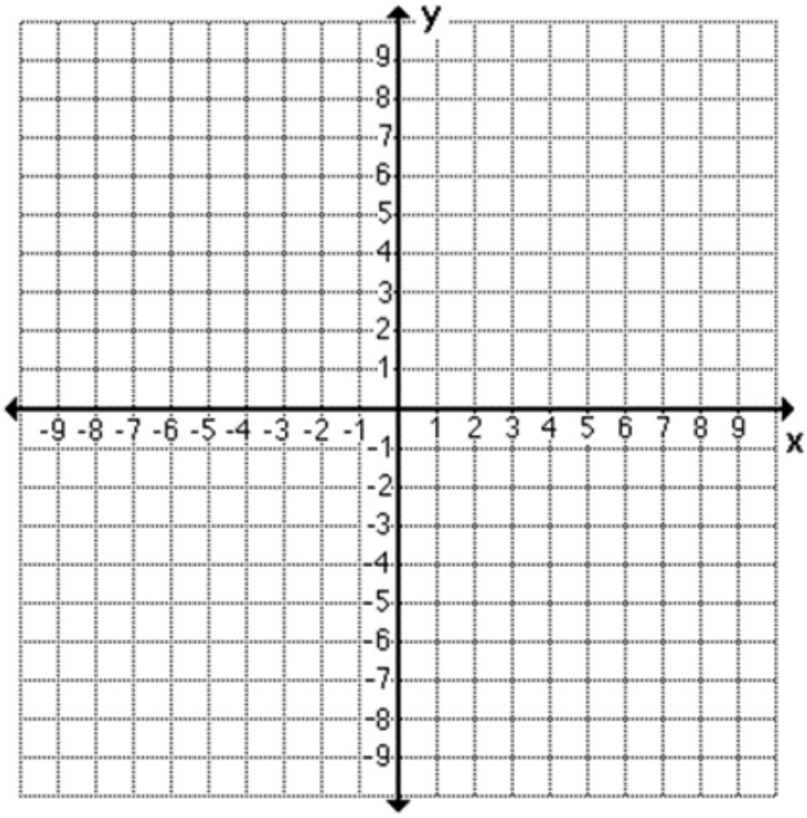
Parallel to the line through (-3,4) and (11,-3) and passing through the point (10,13)

Systems of equations

- Graphing
- Substitution
- Elimination

Graphing

- Linear
- Inequalities
- No Solution



Substitution

Solve.

$-4x - 5y = -3$

$x - 2y = 4$

$x = 2y + 4$

$-4(2y+4) - 5y = -3$

$y = -1$

$x = 2$

$(2, -1)$

Elimination

Solve.

$$x + 2y = 2 \quad (4)$$
$$3x - 8y = -22$$

$$4x + 8y = 8$$

$$7x = -14$$

$$x = -2$$

$$-2 + 2y = 2$$
$$2y = 4$$
$$y = 2$$

$(-2, 2)$

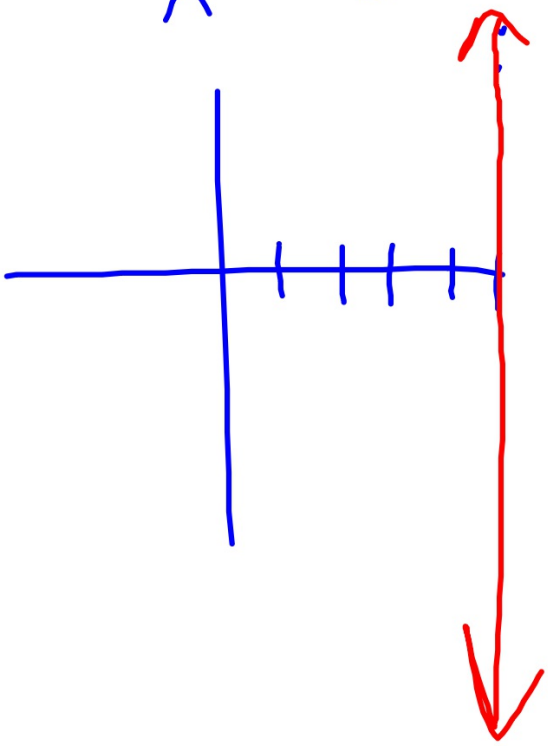
$$x - 2y = -6$$
$$-3x + 6y = 8$$

$$2x + 16y = 14$$
$$x + 8y = 7$$

#13 - 30

HW #2

$x = 5$



$y = 5$