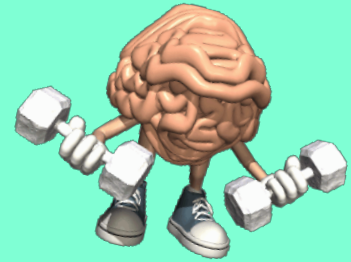


June 1, 2017



Warm Up



Solve each system by substitution.

$$\begin{aligned} 3) \quad & \textcircled{1} 3x + 6y = 3 \\ & \textcircled{2} x - 4y = -23 \Rightarrow \textcircled{3} x = 4y - 23 \end{aligned}$$

$$\begin{aligned} 4) \quad & x - 7y = -1 \\ & 2x - 2y = -2 \end{aligned}$$

Solve each system by elimination.

$$\begin{aligned} 5) \quad & \textcircled{1} -3x - 1y = -17 \\ & \textcircled{2} 3x + 7y = -25 \end{aligned}$$

$$\begin{aligned} 6) \quad & 2x - 6y = -16 \\ & - (2x - 7y = -18) \end{aligned}$$

$$\frac{6y}{6} = \frac{-42}{6}$$

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

↓ sub ①

$$-3x - 1y = -17$$

$$-3x - 1(-7) = -17$$

$$-3x + 7 = -17 - 7$$

$$\frac{-3x}{-3} = \frac{-24}{-3}$$

$$(8, -7)$$

$$\boxed{x = 8}$$

$$\begin{aligned} & 2x - 6y = -16 \\ - & 2x + 7y = +18 \end{aligned}$$

$$1y = 2$$

$$\boxed{y = 2}$$

↓ sub ①

$$\begin{aligned} 2x - 6y &= -16 \\ 2x - 6(2) &= -16 \\ 2x - 12 &= -16 + 12 \end{aligned}$$

$$2x = -4$$

$$\frac{2x}{2} = \frac{-4}{2}$$

$$\boxed{x = -2}$$

$$\textcircled{1} 3x + 6y = 3$$

$$\textcircled{3} x = 4y - 23$$

↓ sub ①

$$\leftarrow \textcircled{2} x - 4y = -23$$

$$(-7, 4)$$

$$3(x) + 6y = 3$$

$$3(4y - 23) + 6y = 3$$

$$12y - 69 + 6y = 3$$

$$18y - 69 = 3 + 69$$

$$\frac{18y}{18} = \frac{72}{18}$$

$$y = 4$$

↓ sub ③

$$x = 4y - 23$$

$$= 4(4) - 23$$

$$= 16 - 23$$

$$x = -7$$

$$(-7, 4)$$

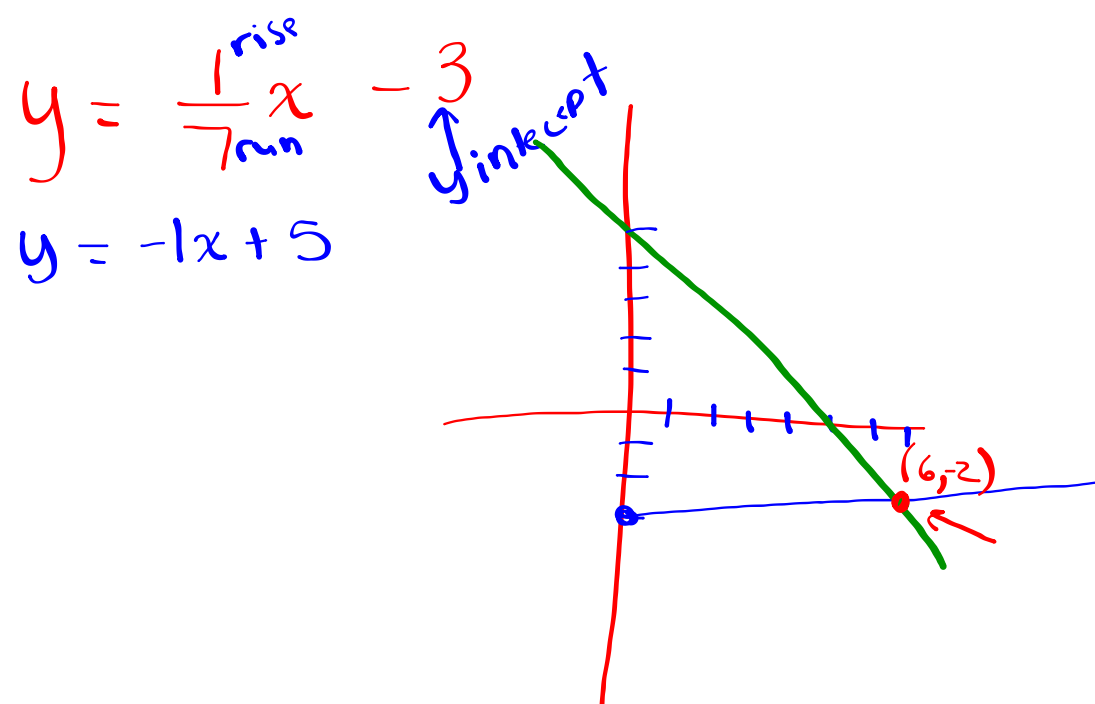
$$x - 7y = -1$$
$$2x - 2y = -2$$

$(-1, 0)$

$y = mx + b$

$$\frac{-1}{-7}y = \frac{-x}{-7} - \frac{1}{-7}$$
$$y = \frac{1}{7}x + \frac{1}{7}$$

\uparrow m \uparrow y intercept



$$-3x - y = -17$$

$$3x + 7y = -25$$

$$(8, -7)$$

$$2x - 6y = -16$$

$$2x - 7y = -18$$

$$(-2, 2)$$

Math 10 (Numbers Relations & Functions)

Name _____

Elimination

Did Dec . 21 & 22

Date _____

Solve each system by elimination.

1) $2x + 8y = 8$
 $-3x - 8y = -4$

2) $-x + 4y = 7$
 $x + 4y = 25$

3) $-9x + 8y = 15$
 $-9x + 6y = 27$

4) $-x - 5y = -3$
 $-x + 3y = 13$

5) $-5x + 2y = 9$
 $6x - 2y = -8$

6) $5x + 5y = 30$
 $5x + 2y = 12$

7) $-10x + 8y = -28$
 $9x + 4y = 14$

8) $-6x + y = -15$
 $-12x - 3y = -15$

9) $-5x + 10y = -10$
 $-7x - 5y = -14$

10) $-5x + 10y = 5$
 $10x - 4y = 6$

$$\begin{array}{l} 1) \quad 2x + 8y = 8 \\ \quad -3x - 8y = -4 \\ \quad \quad (-4, 2) \end{array}$$

$$\begin{array}{l} 2) \quad -x + 4y = 7 \\ \quad x + 4y = 25 \\ \quad \quad (9, 4) \end{array}$$

$$\begin{array}{l} 3) \quad -9x + 8y = 15 \\ \quad \quad -9x + 6y = 27 \\ \quad \quad \quad (-7, -6) \end{array}$$

$$\begin{array}{l} 4) \quad -x - 5y = -3 \\ \quad \quad -x + 3y = 13 \\ \quad \quad \quad (-7, 2) \end{array}$$

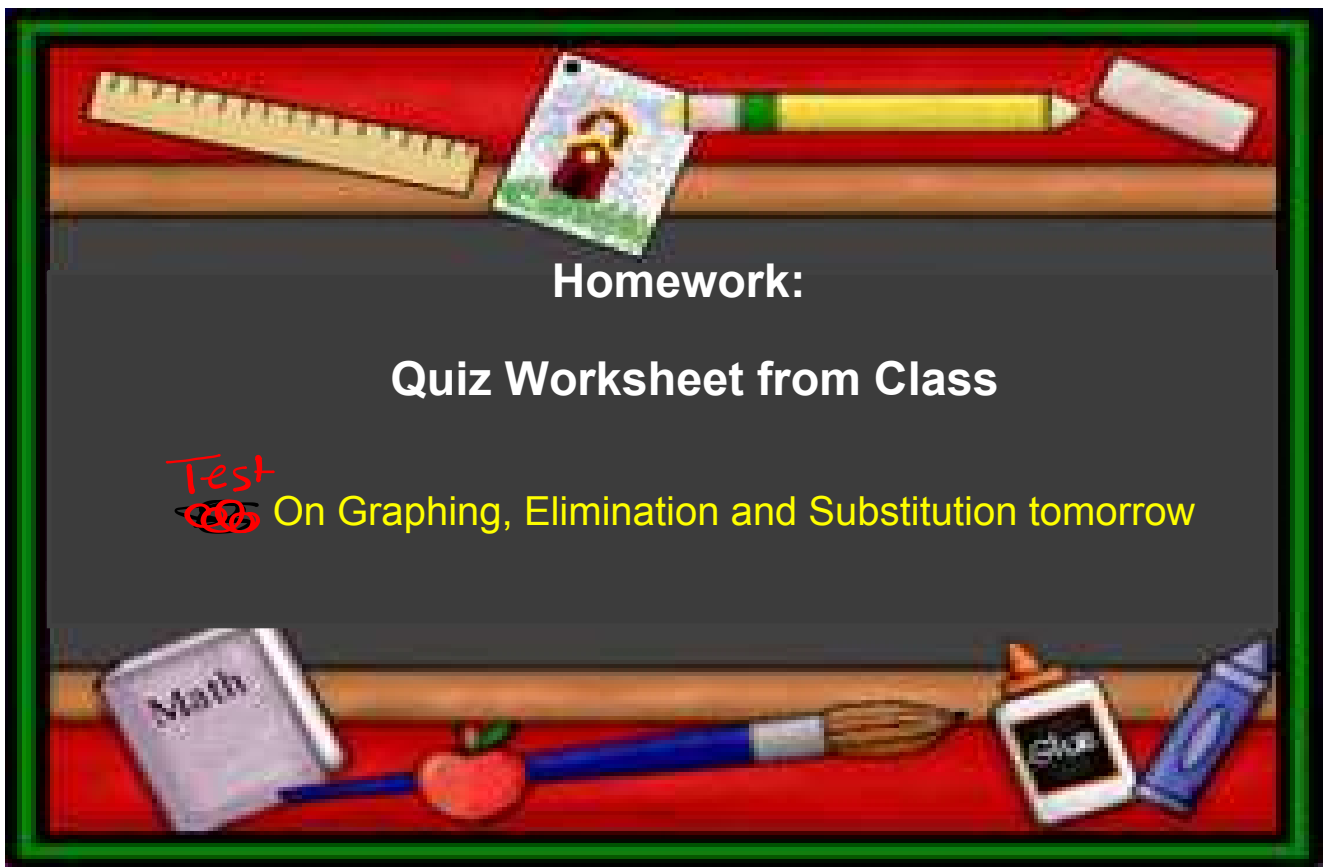
$$\begin{array}{l} 5) \quad -5x + 2y = 9 \\ \quad \quad 6x - 2y = -8 \\ \quad \quad \quad (1, 7) \end{array}$$

$$\begin{array}{l} 6) \quad 5x + 5y = 30 \\ \quad \quad 5x + 2y = 12 \\ \quad \quad \quad (0, 6) \end{array}$$

You try either way

$$\begin{array}{l} 11) \quad 7x - 2y = 24 \\ \quad \quad 3x + 9y = 30 \\ \quad \quad (4, 2) \end{array}$$

$$\begin{array}{l} 12) \quad -3x - 2y = 2 \\ \quad \quad -5x - 3y = 6 \\ \quad \quad (-6, 8) \end{array}$$



Homework:

Quiz Worksheet from Class

~~Test~~ On Graphing, Elimination and Substitution tomorrow

Elimination

Date _____

Solve each system by elimination.

1)
$$\begin{aligned} 2x + 8y &= 8 \\ -3x - 8y &= -4 \end{aligned}$$

2)
$$\begin{aligned} -x + 4y &= 7 \\ x + 4y &= 25 \end{aligned}$$

3)
$$\begin{aligned} -9x + 8y &= 15 \\ -9x + 6y &= 27 \end{aligned}$$

4)
$$\begin{aligned} -x - 5y &= -3 \\ -x + 3y &= 13 \end{aligned}$$

5)
$$\begin{aligned} -5x + 2y &= 9 \\ 6x - 2y &= -8 \end{aligned}$$

6)
$$\begin{aligned} 5x + 5y &= 30 \\ 5x + 2y &= 12 \end{aligned}$$

9)
$$\begin{aligned} -5x + 10y &= -10 \\ -7x - 5y &= -14 \end{aligned}$$

10)
$$\begin{aligned} -5x + 10y &= 5 \\ 10x - 4y &= 6 \end{aligned}$$

11)
$$\begin{aligned} 7x - 2y &= 24 \\ 3x + 9y &= 30 \end{aligned}$$

12)
$$\begin{aligned} -3x - 2y &= 2 \\ -5x - 3y &= 6 \end{aligned}$$

13)
$$\begin{aligned} 3x - 6y &= 30 \\ -10x - 9y &= -13 \end{aligned}$$

14)
$$\begin{aligned} 7x - 10y &= 0 \\ -9x - 4y &= 0 \end{aligned}$$

15)
$$\begin{aligned} -10x + 7y &= 12 \\ -3x + 6y &= -12 \end{aligned}$$

16)
$$\begin{aligned} -3x + 4y &= 2 \\ -5x + 3y &= 29 \end{aligned}$$

17)
$$\begin{aligned} -10x - 6y &= -14 \\ 8x + 5y &= 11 \end{aligned}$$

18)
$$\begin{aligned} -3x - 2y &= 8 \\ -8x - 7y &= 18 \end{aligned}$$

$$\begin{array}{l} 7) \quad -10x + 8y = -28 \\ \quad \quad 9x + 4y = 14 \\ \quad \quad \quad (2, -1) \end{array}$$

$$\begin{array}{l} 8) \quad -6x + y = -15 \\ \quad \quad -12x - 3y = -15 \\ \quad \quad \quad (2, -3) \end{array}$$

$$\begin{array}{l} 9) \quad -5x + 10y = -10 \\ \quad -7x - 5y = -14 \\ \quad (2, 0) \end{array}$$

$$\begin{array}{l} 10) \quad -5x + 10y = 5 \\ \quad 10x - 4y = 6 \\ \quad (1, 1) \end{array}$$

$$\begin{aligned} 11) \quad & 7x - 2y = 24 \\ & 3x + 9y = 30 \\ & (4, 2) \end{aligned}$$

$$\begin{aligned} 12) \quad & -3x - 2y = 2 \\ & -5x - 3y = 6 \\ & (-6, 8) \end{aligned}$$

$$1) \begin{cases} 7x - 2y = 24 & \textcircled{1} \\ 3x + 9y = 30 & \textcircled{2} \end{cases}$$

$$(4, 2)$$

$$\textcircled{1} \times 3$$

$$3(7x - 2y = 24)$$

New
①

$$21x - 6y = 72$$

$$12) \begin{cases} -3x - 2y = 2 & \textcircled{1} \\ -5x - 3y = 6 & \textcircled{2} \end{cases}$$

$$(-6, 8)$$

$$\textcircled{2} \times 7$$

$$7(-5x - 3y = 6)$$

New
②

$$21x + 63y = 210$$

$$\begin{array}{r} 21x - 6y = 72 \\ - (21x + 63y = 210) \\ \hline -69y = -138 \end{array}$$

$$y = \frac{-138}{-69}$$

$$y = 2$$

$$7x - 2y = 24$$

$$7x - 2(2) = 24$$

$$7x - 4 = 24$$

$$7x = 28$$

$$x = 4$$

$$13) \begin{array}{l} \textcircled{1} 3x - 6y = 30 \\ \textcircled{2} -10x - 9y = -13 \end{array}$$

$$(4, -3)$$

$$14) \begin{array}{l} 7x \\ -9 \\ (0, \end{array}$$

$$\textcircled{1} \times 3$$

$$3(3x - 6y = 30)$$

New $\textcircled{1}$

$$\boxed{9x - 18y = 90}$$

$$\textcircled{2} \times -2$$

$$-2(-10x - 9y = -13)$$

$$\boxed{20x + 18y = 26}$$

New $\textcircled{2}$

$$9x - 18y = 90$$

$$+ (20x + 18y = 26)$$

$$\hline 29x = 116$$

$$x = \frac{116}{29}$$

$$\boxed{x = 4}$$

$$3x - 6y = 30$$

$$3(4) - 6y = 30$$

$$12 - 6y = 30$$

$$-6y = 18$$

$$\boxed{y = -3}$$

$$\begin{array}{l} 15) \quad -10x + 7y = 12 \\ \quad \quad -3x + 6y = -12 \\ \quad \quad \quad (-4, -4) \end{array}$$

$$\begin{array}{l} 16) \quad -3x + 4y = 2 \\ \quad \quad -5x + 3y = 29 \\ \quad \quad \quad (-10, -7) \end{array}$$

$$\begin{array}{l} 17) \quad -10x - 6y = -14 \\ \quad \quad 8x + 5y = 11 \\ \quad \quad (2, -1) \end{array}$$

$$\begin{array}{l} 18) \quad -3x - 2y = 8 \\ \quad \quad -8x - 7y = 18 \\ \quad \quad (-4, 2) \end{array}$$