

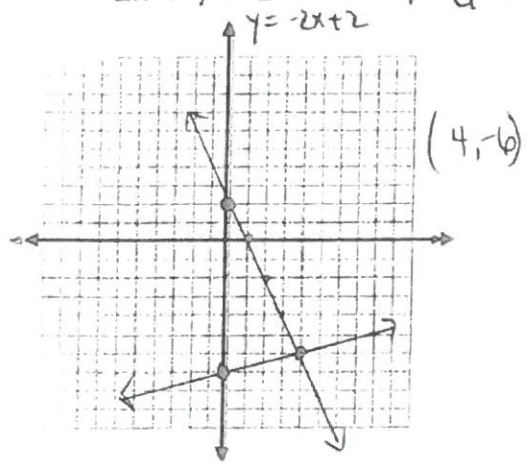
Name Key

Date _____

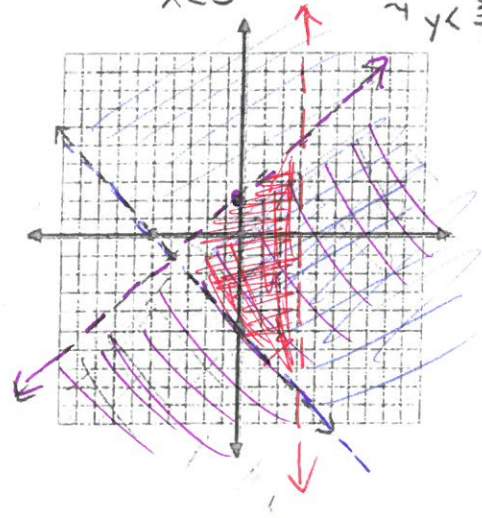
Systems of Equations Review

Solve the linear system by graphing.

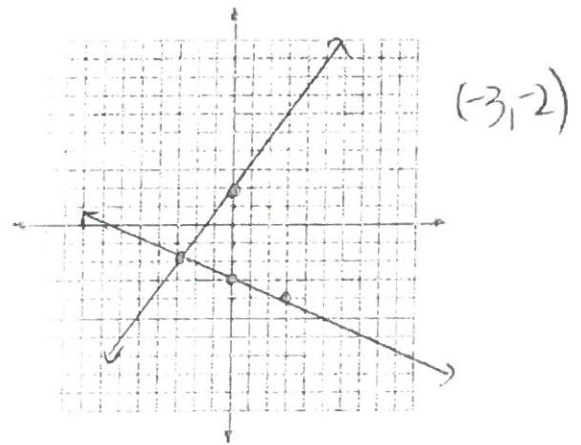
1. a. $x - 4y = 28$ $-4y = -x + 28$
 $2x + y = 2$ $y = \frac{x}{4} - 7$



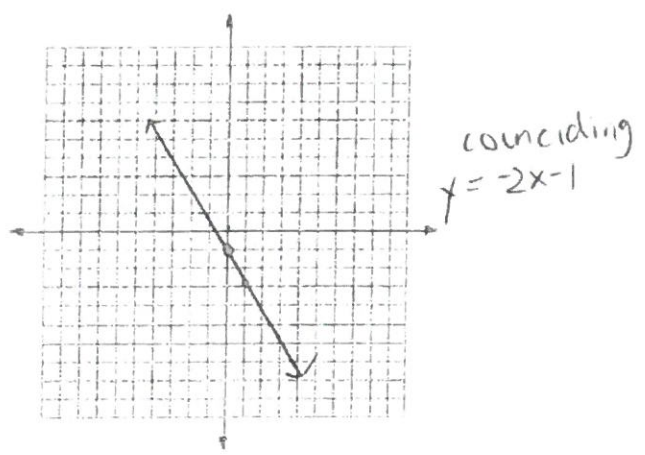
b. $x + y > -5$ $-4y > -3x - 8$
 $3x - 4y > -8$ $\div 4$ $y < \frac{3}{4}x + 2$
 $x < 3$



c. $y = \frac{-1}{3}x - 3$
 $y = \frac{4}{3}x + 2$



d. $2x + y = -1$ $y = -2x - 1$
 $4y = -8x - 4$ $y = -2x - 1$



Solve the linear system using substitution.

2. $y - 5 = x$ $y = x + 5$ $(3, 8)$
 $4x - y = 4$ $4x - (x + 5) = 4$
 $4x - x - 5 = 4$
 $3x = 9$
 $x = 3$ $y = 8$

14. Bell and Irene together sold 137 tickets for a benefit concert. Irene sold 10 fewer than twice as many as Bell. How many tickets did each girl sell?

$$\begin{aligned} x &= \text{Belle} \\ y &= \text{Irene} \end{aligned}$$

$$\begin{aligned} x + y &= 137 \\ y &= 2x - 10 \end{aligned}$$

subst. $x + 2x - 10 = 137$

$$3x = 147$$

$$x = 49$$

$$y = 88$$

Belle sold 49
Irene sold 88

16. Mrs. Flips sold 300 cookies for her bake sale. She sold two types of cookies: large chocolate chip and small peanut butter cookies. She charged \$1 for the chocolate chip and 50-cents for the peanut butter cookies and collected \$270 total. How many of each type did she sell?

$$\begin{aligned} x &= \text{cc} \\ y &= \text{pb} \end{aligned}$$

$$\begin{aligned} x + y &= 300 \\ 1x + .5y &= 270 \end{aligned}$$

$$x = 300 - y$$

$$300 - y + .5y = 270$$

$$-.5y = -30$$

$$y = 60$$

$$x = 240$$

Sold 240 ch. chip
60 Pean. Butter

17. Billy's Restaurant ordered 200 flowers for Mother's Day. They ordered carnations at \$1.50 each, roses at \$5.75 each, and daisies at \$2.60 each. They ordered mostly carnations, and 20 fewer roses than daisies. The total order came to \$589.50. How many of each type of flower was ordered?

$$\begin{aligned} 80 & x = \text{carnations} \\ 50 & y = \text{roses} \\ 70 & z = \text{daisies} \end{aligned}$$

$$x + y + z = 200$$

$$1.5x + 5.75y + 2.6z = 589.50$$

$$y = z - 20$$

$$x + z - 20 + z = 200$$

$$x + 2z = 220$$

$$1.5x + 5.75(z - 20) + 2.6z = 589.50$$

$$1.5x + 5.75z - 115 + 2.6z = 589.50$$

$$1.5x + 8.35z = 704.5$$

18. The Arcadium arcade in Lynchburg, Tennessee uses 3 different colored tokens for their game machines. For \$20 you can purchase any of the following mixtures of tokens: 14 gold, 20 silver, and 24 bronze; OR, 20 gold, 15 silver, and 19 bronze; OR, 30 gold, 5 silver, and 13 bronze. What is the monetary value of each token?

$$\begin{aligned} x &= \text{gold} \\ y &= \text{silver} \\ z &= \text{bronze} \end{aligned}$$

$$\textcircled{1} \quad 14x + 20y + 24z = 20$$

$$\textcircled{2} \quad 20x + 15y + 19z = 20$$

$$\textcircled{3} \quad 30x + 5y + 13z = 20$$

elim. y

→

$$\textcircled{3} (30x + 5y + 13z = 20) - 4$$

$$\textcircled{1} 14x + 20y + 24z = 20$$

$$-120x - 20y - 52z = -80$$

$$\boxed{-106x - 28z = -60}$$

$$-106x - 28z = -60$$

$$98x + 28z = 56$$

$$-8x = -4$$

$$x = 1/2 \text{ or } \boxed{.50}$$

$$30(.50) + 5y + 13(.25) = 20$$

$$15 + 5y + 3.25 = 20$$

$$5y = 1.75$$

$$y = \boxed{0.35}$$

$$\textcircled{3} (30x + 5y + 13z = 20) - 3$$

$$\textcircled{2} 20x + 15y + 19z = 20$$

$$-90x - 15y - 39z = -60$$

$$-70x - 20z = -40$$

$$\hookrightarrow \boxed{-7x - 2z = -4}$$

$$x = 1/4$$

$$-7(.5) - 2z = -4$$

$$-3.5 - 2z = -4$$

$$-2z = -.5$$

$$\boxed{z = 0.25}$$