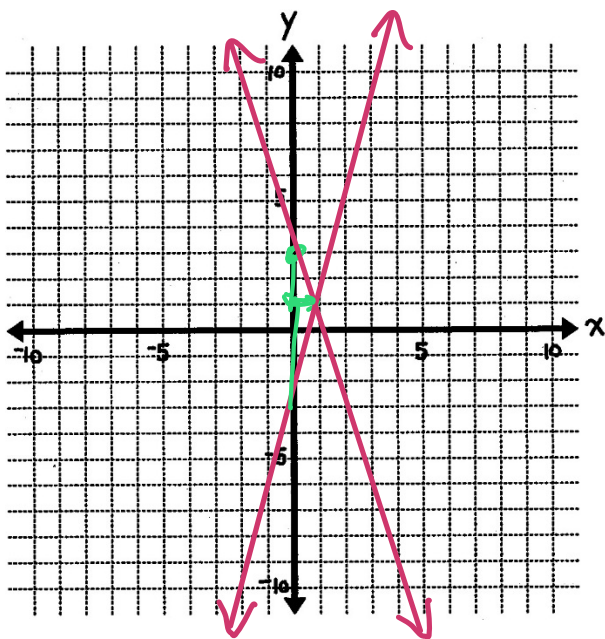


## Chapter 5 Review

For problems #1-2, solve the systems of linear equations by **graphing**.

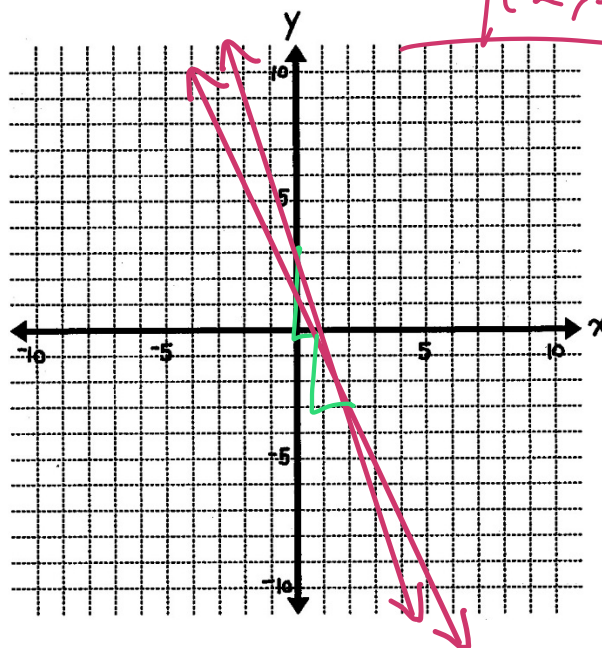
1)  $y = -2x + 3$   
 $y = 4x - 3$

(1, 1)



2)  $\frac{3y}{3} = \frac{-9x+9}{3} \rightarrow y = -3x+3$   
 $\frac{4y+8x}{4} = \frac{4}{4}$   
 $-8x - 8x \rightarrow \frac{4y}{4} = \frac{-8x+4}{4}$   
 $y = -2x+1$

(2, -3)



For problems #3-6, solve the systems of linear equations by **substitution**.

3)  $y = -3x - 7$   
 $y = x + 9$

$-3x - 7 = x + 9$   
 $+3x \quad +3x$   
 $-7 = 4x + 9$   
 $-9 \quad -9$   
 $\frac{-16}{4} = \frac{4x}{4}$   
 $-4 = x$

$y = -3(-4) - 7$   
 $y = 12 - 7$   
 $y = 5$

(-4, 5)

4)  $x = y + 1$   
 $x + 3y = 13$

$(y+1) + 3y = 13$   
 $4y + 1 = 13$   
 $-1 \quad -1$   
 $\frac{4y}{4} = \frac{12}{4}$   
 $y = 3$

$x = 3 + 1$   
 $x = 4$

(4, 3)

5)  $x + 2y = -8$

$y = 2x + 16$

$x + 2(2x + 16) = -8$

$x + 4x + 32 = -8$

$5x + 32 = -8$

$-32 \quad -32$

$\frac{5x}{5} = \frac{-40}{5}$

$x = -8$

$y = 2(-8) + 16$

$y = -16 + 16$

$y = 0$

$\boxed{(-8, 0)}$

6)  $-x + 5y = 28$

$x + 3y = 20$

$-3y \quad -3y$

$-x + 5y = 28$

$x = -3y + 20$

$x = -3(6) + 20$

$x = -18 + 20$

$x = 2$

$-(-3y + 20) + 5y = 28$

$3y - 20 + 5y = 28$

$8y - 20 = 28$

$\frac{8y}{8} = \frac{48}{8}$

$y = 6$

$\boxed{(2, 6)}$

For problems #7-10, solve the system of linear equations by **elimination**.

7)  $x + 4y = 4$

$-x + 2y = 8$

$\frac{6y}{6} = \frac{12}{6}$

$y = 2$

$x + 4(2) = 4$

$x + 8 = 4$

$-8 \quad -8$

$x = -4$

$\boxed{(-4, 2)}$

8)  $y = -9x + 2$

$y = -3x - 4$

$+9x \quad +9x$

$9x + y = 2$

$-3x + y = -4$

$\frac{6x}{6} = \frac{6}{6}$

$x = 1$

$9(1) + y = 2$

$9 + y = 2$

$y = -7$

$\boxed{(1, -7)}$

9)  $-10x + 5y = 30$

$-5(-2x + 2y = 6)$

$-10x + 5y = 30$

$10x - 10y = -30$

$-5y = 0$

$-5y = 0$

$y = 0$

$-10x + 5(0) = 30$

$\frac{-10x}{-10} = \frac{30}{-10}$

$x = -3$

$\boxed{(-3, 0)}$

10)  $2(3x + 18y = 12) \rightarrow 6x + 36y = 24$

$-3(2x + 8y = 6) \rightarrow -6x - 24y = -18$

$\frac{12y}{12} = \frac{12}{12}$

$y = 1$

$6x + 36(1) = 24$

$6x + 36 = 24$

$\frac{6x}{6} = \frac{-12}{6}$

$x = -2$

$\boxed{(-2, 1)}$

For problems #11-13, write a system of linear equations and solve using elimination or substitution method.

- 11) The table shows the purchases made by two customers at a meat counter. Determine from the table the amount that a slice of turkey and ham would cost.

	Sliced Turkey (pounds)	Sliced Ham (pounds)	Total Cost
Customer 1	4	1	\$8
Customer 2	2	4	\$11

Let  $t$  = cost of a slice of turkey  
 $h$  = cost of a slice of ham

\$2.00 for sliced ham  
 \$1.50 for sliced turkey

$$4t + 1h = 8$$

$$-2(2t + 4h = 11)$$

$$\rightarrow 4t + 1h = 8$$

$$\rightarrow -4t - 8h = -22$$

$$\hline -7h = -14$$

$$\frac{-7}{-7} \quad \frac{-14}{-7}$$

$$h = 2$$

$$4t + 2 = 8$$

$$\frac{4t}{4} = \frac{6}{4}$$

$$t = 1.5$$

- 12) You and your friend are in line behind each other at Pizza My Heart. Your friend's family gets 2 slices of pizza and 3 salads for \$22. Your family gets 3 slices of pizza and 2 salads for \$20.50. How much is a slice of pizza? How much is a salad?

Let  $p$  = cost of a slice of pizza  
 $s$  = cost of a salad

$$3(2p + 3s = 22) \rightarrow 6p + 9s = 66$$

$$-2(3p + 2s = 20.50) \rightarrow -6p - 4s = -41$$

$$\hline 5s = 25$$

$$\frac{5s}{5} = \frac{25}{5}$$

$$s = 5$$

\$5.00 for a salad  
 \$3.50 for a slice of pizza

$$6p + 9(5) = 66$$

$$6p + 45 = 66$$

$$\frac{6p}{6} = \frac{21}{6}$$

$$p = 3.5$$

- 13) Money Bags has 27 dimes and nickels in his coin purse worth \$2.30. How many nickels and dimes does he have?

$n$  = # of nickels  
 $d$  = # of dimes

7 nickels  
 20 dimes

$$n + d = 27$$

$$5n + 10d = 230$$

$$-5n - 5d = -130$$

$$\hline 5d = 100$$

$$\frac{5d}{5} = \frac{100}{5}$$

$$d = 20$$

$$n + 20 = 27$$

$$\frac{n}{1} = \frac{7}{1}$$

$$n = 7$$