1. Solve absolute value equations.
   Worksheet 1  1 – 22

2. Solve absolute value inequalities.
   Worksheet 2  1 – 21

3. Graph linear equations and inequalities in two variables. (Sections 2.3, 2.8)
   Page 93  31-45 odd
   Page 135  7 – 17 odd

4. Graph systems of linear inequalities (Section 3.3)
   Page 171  4 - 10, 17, 18
   Worksheet 4  1-8

5. Solve a system of linear equations algebraically by the substitution method or by the elimination method. (Section 3.2)
   Page 164  3-7, 15-18, 27-34, 44 – 49 (skip 45)
   Worksheet 5  1 – 8

6. Solve word problems involving systems of linear equations.
   Worksheet 6  1 – 10

7. Solve systems of linear equations in three variables. (Section 3.4)
   A. Worksheet 7  1 – 8
   B. Page 182  3-6, 9-12, 21, 25, 26

Review
   Worksheet Review  1 – 36
Worksheet 1

Solve the equation. If there is no solution write ‘no solution’.

1. $|x - 5| = 3$
2. $|6 - x| = 4$
3. $|2x - 5| = 13$
4. $|3x + 9| = 0$
5. $\left| \frac{1}{4}x - 3 \right| = 10$
6. $|20 - 9x| = 7$
7. $|x + 9| = -11$
8. $4|x - 2| = 28$
9. $\left| \frac{1}{7}(6 - 3x) \right| = 3$
10. $\left| \frac{5}{6}(2x - 7) \right| = 30$
11. $3|2x - 5| = 0$
12. $-2\left| \frac{1}{2}x + 4 \right| = -12$
13. $7 + |5 + 2x| = 16$
14. $8 - |4x + 1| = 11$
15. $|3x + 14| - 2 = 5$
16. $2|7x - 10| + 1 = 9$
17. $7 - 3|3x - 6| = -14$
18. $5 + 2|4x + 7| = 1$
19. $9 + \left| \frac{2}{5}\left(\frac{3}{2}x - 6\right) \right| = 15$
20. $7 = |8x - 1|$
21. $\frac{2}{3} = |2x - 1|$
22. $\frac{1}{2} = |5 - 3x|$
Worksheet 2

Solve the following inequalities and then graph the solution. If there is no solution write ‘no solution’. If the solution is all real numbers write ‘all real numbers’.

1. \[ |x| \leq 5 \]
2. \[ |x| > 4 \]
3. \[ |x| > -2 \]
4. \[ |x - 2| \leq 7 \]
5. \[ 30 > |3x - 15| \]
6. \[ |x| < -6 \]
7. \[ |2x + 6| + 3 \geq 13 \]
8. \[ 4|4x - 9| \leq 28 \]
9. \[ 7 < \frac{1}{2}|5x + 1| \]
10. \[ -2|x + 4| < 10 \]
11. \[ 3 < \sqrt{16 - \frac{x}{2}} \]
12. \[ |24 - x| + 2 \leq 13 \]
13. \[ 2|7 - 2x| - 1 \leq 37 \]
14. \[ 11 \leq 17 - 3|4 + x| \]
15. \[ \frac{1}{7}x + 2 \leq -5 > 3 \]
16. \[ 9 = |4x + 1| \]
17. \[ \frac{5 - x}{6} = 2 \]
18. \[ -\frac{3}{7}|3x + 4| < -21 \]
19. \[ 5 - 6\left|\frac{x}{2} - 1\right| > -1 \]

20. Multiple Choice: What is the solution of \[ |6x - 9| \geq 33? \]
   a. \[ -4 \leq x \leq 7 \]
   b. \[ -7 \leq x \leq 4 \]
   c. \[ x \leq -4 \text{ or } x \geq 7 \]
   d. \[ x \leq -7 \text{ or } x \geq 4 \]

21. Multiple Choice: Which is the graph of \[ 12 \geq |4x - 8| \]?
   a. [Graph A]
   b. [Graph B]
   c. [Graph C]
   d. [Graph D]
Worksheet 4

1. Multiple Choice: Which point is in the solution set of this system:\[
\begin{align*}
x + y &\leq 6 \\
2y &> x
\end{align*}
\]
a. (5, 3)  b. (–1, 1)  c. (4, 1)  d. (8, –1)

2. Multiple Choice: Which point is in the solution set of this system:\[
\begin{align*}
y &\leq 2 \\
y &\geq x
\end{align*}
\]
a. (4, 9)  b. (3, 1)  c. (–1, –5)  d. (1, 1)

Graph the following inequality systems:

3. \[
\begin{align*}
x &\geq 0 \\
y &\geq 0 \\
x + y &\leq 5
\end{align*}
\]
4. \[
\begin{align*}
x &\leq 4 \\
y &\leq 8 \\
y &\geq x + 2
\end{align*}
\]
5. \[
\begin{align*}
x &\geq 0 \\
y &\geq -2 \\
y &\leq -x
\end{align*}
\]
6. \[
\begin{align*}
x &\leq 5 \\
y &\geq 3 \\
-x + y &\leq 4
\end{align*}
\]
7. \[
\begin{align*}
y &\leq 5 \\
x &\leq 6 \\
2x + 3y &\geq 6
\end{align*}
\]
8. \[
\begin{align*}
x &> -4 \\
y &< 4 \\
x + y &\leq 4
\end{align*}
\]

Worksheet 5

Solve the following systems of equations:

1. \[
\begin{align*}
1.2x + 2.5y &= 4 \\
0.8x - 1.5y &= -10
\end{align*}
\]
2. \[
\begin{align*}
\frac{4}{3}x + \frac{1}{5}y &= 3 \\
\frac{2}{3}x - \frac{3}{5}y &= 5
\end{align*}
\]
3. \[
\begin{align*}
\frac{3}{4}x + \frac{1}{6}y &= \frac{2}{3} \\
9x + 2y &= 8
\end{align*}
\]
4. \[
\begin{align*}
\frac{1}{3}x + \frac{1}{2}y &= 7 \\
\frac{2}{3}x - y &= -2
\end{align*}
\]
5. \[
\begin{align*}
3.6x + 4.8y &= -7.2 \\
5.4x + 9.6y &= 18
\end{align*}
\]
6. \[
\begin{align*}
\frac{3}{5}x - \frac{1}{6}y &= 1 \\
\frac{1}{5}x + \frac{5}{6}y &= 11
\end{align*}
\]
7. \[
\begin{align*}
\frac{2}{5}x - \frac{1}{2}y &= 6 \\
\frac{4}{5}x + \frac{3}{2}y &= -8
\end{align*}
\]
8. \[
\begin{align*}
2.2x + 3.5y &= 0.9 \\
3.3x - 1.4y &= 8
\end{align*}
\]
Worksheet 6

Solve the following word problems by writing 2 equations and then solving algebraically

1. Andrew is selling 2 kinds of candy bars as part of a school fund-raising project. He sold 33 candy bars and collected $43.75. If he sold Kit Kats for $1.25 each and Almond Joys for $1.50 each, how many of each kind did he sell?

2. A fruit stand sold 31 pieces of fruit for $13.70. They sold apples for $0.50 each and oranges for $0.40 each. How many of each kind did they sell?

3. 26 theater tickets were sold. Some were balcony seats at $15.50 each and the rest were stage seats at $22.50 each. Find the number of each that were sold if the total income was $543.

4. Jon ordered 12 pies and 8 cakes for his restaurant one week and his bill was $70.20. The next week he ordered 8 pies and 16 cakes and paid $96.40. Find the price of one pie. Find the price of one cake.

5. Terry cashed a $390 check and received $20 bills and $50 bills. She received a total of 15 bills. How many of each type of bill did she receive?

6. Darrell’s Grain Storage has a total of 30 storage bins to rent. Small ones can hold 15 tons each and large bins hold 20 tons each. If 510 total tons of grain can be stored, how many of each type are there?

7. A total of 1096 people attended the concert at the County Fair. Reserved seats cost $25 each and unreserved seats cost $20 each. If $26,170 was collected, how many of each type of ticket was sold?

8. Tickets to the movies are $7 for adults and $4 for children. For a 5:30 showing, they sold 272 tickets and took in $1694. How many of each type of ticket were sold?

9. For a banquet Ivana bought several dozen roses and several dozen carnations. The roses cost $20 per dozen, and the carnations cost $12 per dozen. Ivana bought a total of 15 dozen flowers and paid a total of $260. How many roses did she buy?

10. A bakery sold 18 packages of donuts. Some packages contained 6 donuts each, and the rest contained 12 donuts each. There were 150 donuts in all. How many packages of 12 donuts did they sell?
Worksheet 7

Solve each system:
1. \[
\begin{align*}
    x + y - 3z &= 10 \\
    y + z &= 12 \\
    2z &= -4
\end{align*}
\]
2. \[
\begin{align*}
    x + 2y + 3z &= -1 \\
    3y + 2z &= -1 \\
    x + 5z &= -7
\end{align*}
\]
3. \[
\begin{align*}
    x + 2y - z &= 3 \\
    3y + z &= -10 \\
    2x + 4y &= -2
\end{align*}
\]
4. \[
\begin{align*}
    -2x + z &= 9 \\
    -x + 4y &= -4 \\
    -x + 3y + 2z &= 0
\end{align*}
\]
5. \[
\begin{align*}
    z + 3x + y &= 3 \\
    2x + 3y &= 10 \\
    z - 2y &= -6
\end{align*}
\]

Write 3 equations with 3 variables for the following and then solve:
6. 2 hamburgers and 1 coke and 1 order of fries cost $9.  
   2 hamburgers and 2 cokes cost $8.  
   3 cokes and 2 fries cost $7.  
   Find the cost of each individual item.
7. Poua has 3 stones - a diamond, a ruby, and an opal. When she weighs the 
   diamond and the ruby together they weigh 6 carats. Together, the ruby and 
   the opal weigh 12 carats. The diamond and the opal together weigh 10 carats.  
   Find the weight of each individual stone.
8. A pen and a pencil cost 30¢. Two pencils and an eraser cost 39¢. A pencil, an 
   eraser and two pens cost 63¢. How much is each item?
Review

Solve the following and graph:

1. \[ \left| \frac{x}{4} + 1 \right| = 6 \]  
2. \[ |5 - x| = -7 \]  
3. \[ 4|x - 3| + 1 = 13 \]

4. \[ 6 \geq |4x - 2| \]  
5. \[ \left| 8 - \frac{x}{3} \right| \geq 1 \]  
6. \[ 1 - |x + 9| < -7 \]

7. \[ 8 > |4x + 12| \]  
8. \[ |3x + 1| < -13 \]  
9. \[ 8 = 6 + 2|4x + 4| \]

Determine if the given point is a solution of the system.
10. \( (-2,0) \)
    \[ \begin{align*}
    2x + y &= -4 \\
    3x + 2y &= -5
    \end{align*} \]

Graph the following

11. \[ y = x \]  
12. \[ 2x + y = 4 \]  
13. \[ 3x + y > -3 \]

14. \[ y \leq 2x - 1 \]  
15. \[ y \leq 3 \]  
16. \[ \begin{cases} 
    y \geq -2x \\
    y \geq 1 
\end{cases} \]

17. \[ \begin{cases} 
    x < 2 \\
    3x + y > 3 
\end{cases} \]  
18. \[ \begin{cases} 
    x \geq 3 \\
    y \leq 4 
\end{cases} \]  
19. \[ \begin{cases} 
    y \geq 2x - 3 \\
    x \geq -1 \\
    y \leq 3 
\end{cases} \]

Solve the following systems algebraically. (On some problems there may be no solution or infinitely many solutions. If so, state that.)

20. \[ \begin{align*}
    y &= 9 - x \\
    5x - y &= 3
    \end{align*} \]

21. \[ \begin{align*}
    8x + 5y &= -13 \\
    3x - 2y &= -1
    \end{align*} \]

22. \[ \begin{align*}
    x - y &= 8 \\
    3x - 3y &= 12
    \end{align*} \]

23. \[ \begin{align*}
    \frac{1}{2}x + \frac{2}{3}y &= \frac{5}{6} \\
    \frac{5}{12}x + \frac{7}{12}y &= \frac{3}{4}
    \end{align*} \]

24. \[ \begin{align*}
    2x + 0.3y &= 3.7 \\
    0.5x - 4y &= 5
    \end{align*} \]

25. \[ \begin{align*}
    0.1x + 0.4y &= -1.1 \\
    0.2x - 0.5y &= 1.7
    \end{align*} \]

Solve the following word problems by writing 2 equations and then solving algebraically.

26. 27 binders were sold for $56.50. Large binders sold for $2.50 each and small binders cost $1.95 each. How many of each kind did they sell?

27. Tickets to Faith Hill cost $100 each in advance and $300 at the door. Mary Lou spent $2400 on 16 tickets. How many did she buy in advance and how many at the door?

28. Hot dog buns are sold in packages of 8 buns or in packages containing 24 buns. The 8 bun packages cost $1 each and the 24 bun packages cost $2 each. If 112 buns cost $10 how many packages containing 24 buns were sold?
Solve the system using algebra.

29. \[
\begin{align*}
\begin{cases}
x + y - 5z &= -5 \\
y - 2z &= 14 \\
4y - 2z &= 8 
\end{cases}
\end{align*}
\]

30. \[
\begin{align*}
\begin{cases}
-3x + y - z &= -2 \\
2x - y - 2z &= -12 \\
4x + 2y + z &= 1 
\end{cases}
\end{align*}
\]

Select the correct multiple choice response:

31. Solve: \[|y - 5| = 6\]
   a. \(-1, 11\)  
   b. \(-11, 1\)  
   c. \(-11, 1\)  
   d. no solution

32. Solve: \[2 + 2|x + 4| = 24\]
   a. \(x = 2\)  
   b. \(x = 7\)  
   c. \(x = 2\) or \(x = -10\)  
   d. \(x = 7\) or \(x = -15\)

33. Solve the inequality \[32 > |8 - 4x|\]
   a. \(10 < x < -6\)  
   b. \(-6 < x < 10\)  
   c. \(x > -6\)  
   d. \(x > -6\) or \(x < 10\)

34. Solve: \[|2x - 3| = -7\]
   a. \(5\) or \(-2\)  
   b. \(-5\) or \(2\)  
   c. \(-2\)  
   d. no solution exists

35. Which graph shows the solution of this system of inequalities?
   a. \[
   \begin{align*}
y > 1 \\
y > -x + 3
   \end{align*}
   \]
   b. \[
   \begin{align*}
y > 1 \\
y < -x + 3
   \end{align*}
   \]
   c. \[
   \begin{align*}
y < 1 \\
y > -x + 3
   \end{align*}
   \]
   d. \[
   \begin{align*}
y < 1 \\
y < -x + 3
   \end{align*}
   \]

36. Solve for \(x\):
   \[
   \begin{align*}
   \begin{cases}
6x - 3y + z &= 1 \\
2x + 2y - 4z &= 24 \\
x - 2y + 3z &= -13
\end{cases}
   \end{align*}
   \]
   a. \(-3\)  
   b. \(3\)  
   c. \(-2\)  
   d. \(5\)