

## 2. Some Equations and Inequalities

**A. Some equations and an inequality to solve.** Work together in your groups to show a process for solving each of these equations. See if your group has more than one way. Check with each other before you check the answers. You might find some harder than others. Decide which are the three most difficult and why.

1.  $5x - 7 = 26$

2.  $7z - 2 = 9z - 8$

3.  $\frac{x-2}{3} + \frac{x+1}{8} = \frac{5}{6}$

4.  $.12x + .11(7000 - x) = 790$

5.  $\frac{x}{a} + \frac{c}{b} = 1$ , solve for  $x$

6.  $-3x + 2 > 14$

7.  $|x - 5| = 8$

8. Solve the system of equations.

$$5x - 6y = -4$$

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

9.  $x^2 + 3x = 28$

10.  $\sqrt{2t - 4} = t - 2$

**B. Write an equation and solve it in order to solve each word problem.**

1. The sum of three consecutive integers is 13 more than the smallest.
2. A bill for car repairs totaled \$106. \$23 was for parts, labor was \$22 per hour, and tax was \$6. How many hours of labor were included?
3. Three eighths of a number minus half of the number is 14 less than three fourths of the number. What is the number?

**Answers:** (1.)  $x = 6.6$  (2.)  $x = 3$  (3.)  $x = 3$  (4.)  $x = 2000$  (5.)  $x = a - \frac{ab}{c}$  or  $\frac{ac - ab}{c}$   
(6.)  $x < -4$  (7.)  $x = -3, x = 13$  (8.)  $x = -2, y = -1$  (9.)  $x = -7, x = 4$  (10.)  $x = 2, x = 4$   
word problems: (1.) 5, 6, 7 (2.) 3.5 hours (3.) 16