Directions: Solve each problem, showing all work!

1. Find the slope of the line that passes through (-9, 8) and (2, -1)

2. Find the slope of each line:
   a. $y = 3x + 9$
   b. $-2x + 7y = 49$
   c. $y - 8 = \frac{1}{3}(x + 1)$

3. Write the equation in slope intercept form of the line that passes through the points (2, 4) and (-5, 6).

4. Write the equation in standard form of the line that has a slope of 2 and passes through the point (1, 9)

5. Write the equation in standard form of the line that has a slope of $-\frac{1}{3}$ and passes through the point (-3, 5)

6. Write the equation of the line that passes through (-5, 1) and is horizontal.

7. Find the x- and y-intercepts of each line:
   a. $y = \frac{1}{3}x - 9$
   b. $x - 3y = 10$
1. The base pay of a water-delivery person is $210 per week. He also earns 20% commissions on any sale he makes.
   a. Write an equation to represent his total earnings to his sales.
   b. How much does he make if he sells $100.

2. A music store is offering a coupon promotion on its CDs. The regular price for CDs is $14. With the coupon, customers are given $4 off the total purchase price.
   a. Write an equation that models the situation.
   b. Find the total cost for 6 CDs.

3. A candle begins burning at $t = 0$. Its original height is 12 in. After 30 minutes the height of the candle is 8 inches.
   a. Write an equation that relates the height of the candle to the time it has been burning
   b. How many minutes after the candle is lit will it burn out?

4. Joleen is a sales associate in a clothing store. Each week she earns $250 plus a commission equal to 3% of her sales. This week her goal is to earn no less than $460. Write and solve an inequality to find the dollar amount of the sales she must have to reach her goal.
5. Larry runs at an average rate of 8 mi/h. He walks at an average rate of 3 mi/hr.
   a. Write an equation in standard form to relate the times he could spend running and walking if he travels a distance of 15 miles.

   b. If Larry does not walk, how long does he run for?

6. At the surface of the ocean, pressure is 1 atmosphere. At 66 ft below sea level, the pressure is 3 atmospheres. The relationship of pressure and depth is linear.
   a. Write an equation for the data.

   b. Predict the pressure at 100 feet below sea level.

7. Worldwide carbon monoxide emissions are decreasing about 2.6 million metric tons each year. In 1991, carbon monoxide emissions were 79 million metric tons. Use a linear equation to model the relationship between carbon monoxide emissions and time. Let x = 91 correspond to 1991.

8. Your baseball team has a goal to collect at least 160 blankets for a shelter. Team members brought 42 blankets on Monday and 65 blankets on Wednesday. Write and solve an inequality to describe how many blankets the team must donate on Friday to make or exceed their goal.