TRS 92 Homework: Solving Equations
Textbook exercises: p. 151: #29, 31, 35, 36; p. 608: #1-4, 10; p. 699: #1, 3, 5, 6, 11, 14

Thinking Ahead about Relations
You will need to understand this material for your next class. A key will be posted on your instructor's website. It is expected that you will check your work and get help if you need it before coming to class.

Refer to the Day 9 Activity, *Writing Expressions.*
1. In Problem 4b, you wrote an expression that represented the life expectancy for a white male living in the US using the variable t to represent the number of years after 1900. Record the expression here.

2. We can change this expression into an equation by setting it equal to a value:
    a. For example, $48 + 0.37t = 58$ would represent the time when life expectancy reached 58 years. Solve the equation for t.

    b. Write a sentence that interprets the meaning of the solution.

    c. Write and solve another equation representing the time when life expectancy reached 65 years.

We could write an infinite number of equations based on this expression. Each one represents a *specific* pair of numbers representing the number of years and the life expectancy that go together. We can also write a *general* equation that represents all of these different pairs. Instead of writing an equation set equal to a specific number representing the life expectancy, this equation will use a variable for the life expectancy:
$$48 + 0.37t = L \text{ where } L \text{ is the life expectancy of a white male in the US}$$
This equation is called a *relation* because it represents *ordered pairs* that go together:
    Let $t = 3$: $48 + 0.37(3) = 49.11$ → 3 years after 1900, the life expectancy was 49.11 years.
        ordered pair: (3, 49.11)
    Let $t = 10$: $48+0.37(10) = 51.7$ → 10 years after 1900, the expectancy was 51.7 years.
        ordered pair: (10, 51.7)
These ordered pairs are called *solutions* to the equation.

3. Circle each ordered pair that is a solution to the equation: $48 + 0.37t = L$.

(2, 48.74)	(6, 52.32)	(7.5, 48)	(9.5, 51.52)	(12, 52.44)	(14, 53.68)