Worksheet 2.1: Word Problems

1. Solve the following linear equations. Check your solutions.

    (a) $5x - 4 = 21$ Check:

    (b) $2(3 - 2x) = x - 4$ Check:

2. Take a look at the following word problem:

    "In 2013, the New York Yankees and the Los Angeles Dodgers had the highest payrolls in Major League Baseball. The Dodgers' payroll was \$0.1 million less than the Yankees payroll, and the two payrolls totaled \$473.9 million. What was the payroll for each team?"

    Let's break this problem down, so we can express it as an equation.

    (a) Will the number 2013 appear in the equation?

    (b) Let's call the Dodgers' payroll D, and the Yankees payroll Y. Write the phrase "the two payrolls totaled \$473.9 million" as an equation.

    (c) You would like this equation to contain just one variable. Consider the phrase "The Dodgers' payroll was \$0.1 million less than the Yankees payroll", it tells you the relationship between D and Y. Use this to write your equation from (b) with just one variable.

    (d) Solve your equation.

    (e) Have you completely answerer the question? If not, what do you need to completely answer the question?

3. Try using a similar process (to Problem 2) to solve the following problem:

"The Leaning Tower of Pisa is 804 ft shorter than the Eiffel Tower in Paris. The two towers have a total height of 1164 ft. How tall is each tower?"

4. You're an auto mechanic, working for an auto shop that charges $100 to replace the break pads on a car. You get paid $20 per hour, and the cost of the break pads is $30. How many hours can you spend replacing the car's break pads, without your boss getting angry because the shop is no longer making a profit?

Set up an inequality, and solve.