

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Re-Expressing Data (Part 2)

*These questions are imbedded in the activity so students will have an idea when to answer each question.*

Part A: Describe the pattern of the data on page 1.3 of the calculator file.

Part B: Did the bend straighten at all (Pages 1.5 and 1.6)?

Part C: How does it look now (Pages 1.8 and 1.9)?

Part D: Write the steps to re-express the data using step “-1/2” and look at the graph (Don't look ahead yet). Remember the original lists are (Pages 1.10 and 1.11):

x-list: poundtest

y-list: lengthinyards

Part E: No help this time. I gave you a split screen page 1.14. One for the list (top), one for the graph (bottom). Try it. Describe each step as you try. You can always go back in this lesson if you forget the steps. The only thing you may need is that you would define the list as -1/listname.

Part F: Which of those final 2 worked out?

Part G: Recreate the graph (MENU-DATA & STATISTICS) and run a linear regression (Page 1.15). Check the residuals. Write the equation of the line (Use the words instead of the variables).

Example: If step "0" had worked I would say "log(length)" instead of log(y) and "Strength" instead of x.

### **Part 2: Plan B: Attack of the Logarithms**

**Sometimes using the Ladder of Powers fails to succeed. When the curvature is more stubborn and you don't like any of those options we have another option.**

**When none of your data is negative or a zero-value we can use logarithms. Try one of the next 3 options. (Start on page 2.1 for the rest of the questions).**

Part H: How'd it go? Which lists did you decide on?

Part I: Run a linear regression, check the residuals and write an equation for the model you decided on. Use words instead of variables for your equation.

Part J: Interpret the slope and y-intercept.

Part K: What is the value of  $r^2$ ? What does it mean?