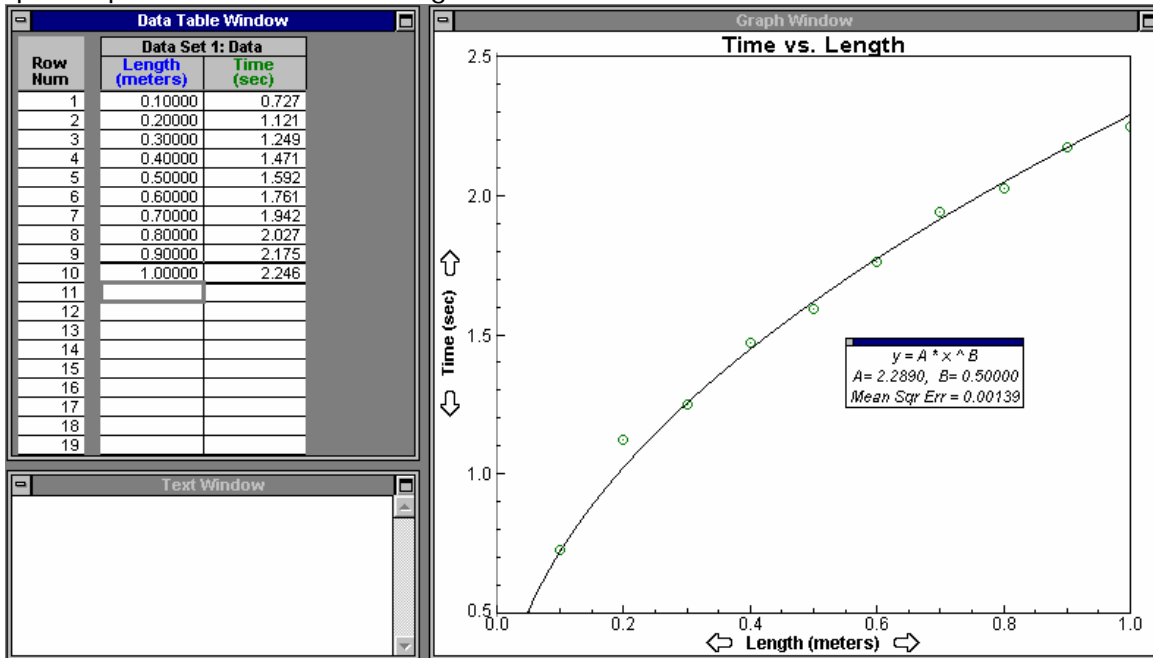


**Just a Swingin' (Reflect and Apply)**

The following data resulted from *Just a Swingin'*. After analyzing the data, Johnny concluded that it would resemble a square root function, therefore, he used Graphical Analysis to come up with a function using the Power regression. The computer produced the following results:



Use the information provided from the graph, the table and your own experience from collecting and analyzing the data from "Just a Swingin' " to answer the given questions:

- 1) Write the equation provided by the graph using the square root notation.
- 2) What is the "x" variable representing in the equation?
- 3) What is the "y" variable representing in the equation?
- 4) Substitute the corresponding variable into the equation in place of the "x" and "y"

*Now that you know what "x" and "y" represent in the equation, use that equation to answer the following questions:*

5) According to the equation, how much time would it take for one swing if the length of the cord is 33cm? (Hint: remember to convert the cm to meters!)

6) According to the equation, how much time would it take for one swing if the length of the cord is 230cm?

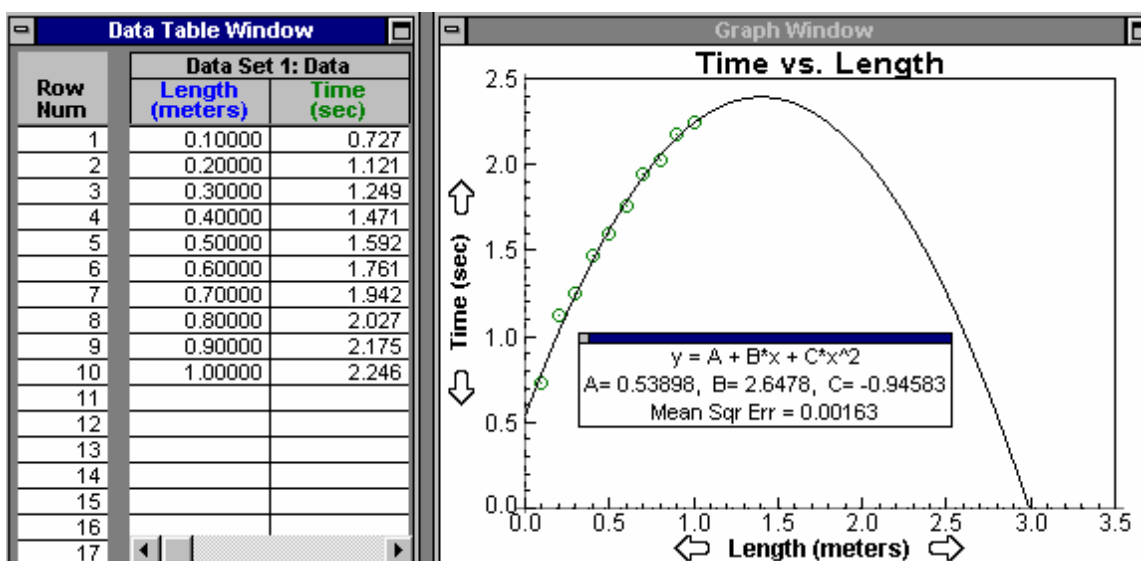
7) According to the equation, how does the cord have if one swing will take 4 seconds?

8) According to the equation, how does the cord have if one swing will take 2.5 seconds?

9) Indicate the **domain and range** for the equation  $y = 2.289\sqrt{x}$

Answer the following question in a **separate piece of paper** and be specific when you answer the questions. Provide any numerical or mathematical data that supports your conclusion. Remember, be specific and clear explaining your reasoning. (This question is worth a quiz grade. You will be graded on your mathematical reasoning, your explanation, and the neatness of your work.)  
**The assignment is due next class period and you are not to collaborate with anybody in your class.**

*Mary was working with Johnny collecting the data and she helped him to use Graphical Analysis to obtain an equation for the experiment. While Johnny copied the data in his paper, Mary came up with a quadratic regression for the data they collected for "Just a Swingin' ". She indicated that the data could be modeled by a quadratic equation such as:  $y = -0.946x^2 + 2.648x + 0.539$*



Explain in detail why this data could not be modeled by a quadratic function. Be specific as to **indicate mathematical reasoning** that involves the domain and the range for the function and this situation as well as your logical reasoning (common sense).

In particular be sure to point out what happens to the time it would take for one swing if you make the cord more than 3 meters long? Does that make sense in the real world? Mathematically?

What would be a better model for the data collected for "Just a Swingin' " and why? Be sure to provide mathematical justification , domain and range, etc.