From Chapter 6:

Laboratory: Whose Law?

The experimental work of psychologist S. Stevens in the twentieth century raised doubts about the accuracy of Weber's law. Stevens proposed a substitute derived from:

$$\frac{\Delta S}{\Delta n} = k \frac{S}{n},$$

k, a constant.

Using the method of Separation of Variables, solve this equation for S as a function of n. Your answer is **Stevens' Law**.

Now we ask you to gather some data, then see which law, Fechner's or Stevens' models your data best. You will need a stimulus, and you will need a subject, someone to judge the stimulus, to give you values for sensation. The subject can be someone willing to give you a little time, your roomate, for example. It shouldn't take long, just a few minutes.

The stimulus will be weight. Go to a grocery store. Weigh, using the scales at the store, 10 pieces of fruit and vegetables. The weights are the values for n. Buy the fruit and vegetables. Bring them home.

Place the objects in identical paper bags. Ask the subject to assign numbers to the bags based on how heavy they *feel*. The subject should not be told how

much the bags weigh. The numbers assigned by the subject are the values the for S.

When you have the data, try choosing constants to fit the equations of Fechner's Law and Stevens' Law to the data. Report on the success of your efforts.

Eat the fruit and vegetables.