

Name _____

Date _____

Fermi Estimates

This problem gives you the chance to

- *estimate weight, volume, and number*
- *estimate relative weights and volumes*
- *arrive at reasonable estimates and state the assumptions you use*

The physicist Enrico Fermi enjoyed posing questions like these to his students and colleagues.

Pick one part (either **a** or **b**) from each of the following three questions, and make the best possible estimate for the situation. Your answer will be a combination of several quantities. Be sure to specify what assumptions you have made in arriving at your estimate.

1. a. How long do you think it would take you to eat your weight in food?
or
b. What is the weight of all the trash produced in your house in a year?



Assumptions:

Calculation:



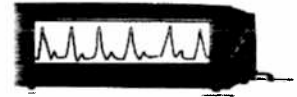
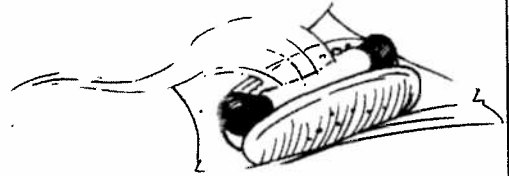
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2. a. How many hot dogs do you think are sold in a baseball season at Fenway Park?

or

b. How many times does a person's heart beat in a lifetime?



Assumptions:

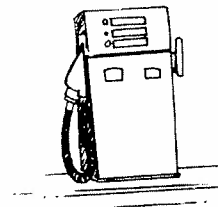
Calculation:



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3. a. What do you think is the volume of gasoline your car uses in a year? How does this compare to the volume of liquid (water, soda, coffee, etc.) you drink in a year?



or

- b. What do you think is the volume occupied by one million dollars in single dollar bills? How does this volume compare to your own body's volume?



Assumptions:

Calculation:

