

Biscuit Bistro  
121 Saint Bernard Road  
Goodyear, AZ 85543

Independent Mathematical Contractors  
Any College  
1 Your Street  
City, State 00000

Dear IMC:

I am a veterinary nutritionist at a small boutique dog food company in Central Arizona. My company produces three kinds of biscuits, Barbecuits, Mighty Meaties and Carnivore Cravings. To create these biscuits, we blend two nutrient sources to provide appropriate amounts of carbohydrates, protein and calcium.

Each unit of Source I provides  $F$  grams of calcium,  $M$  grams of protein, and  $L$  grams of carbohydrates. Each unit of Source II provides  $M - 1$  grams of calcium,  $L$  grams of protein and  $F + 1$  grams of carbohydrates. In each source,  $F$  is the number of letters in your first name,  $M$  is the numbers of letters in your middle name, and  $L$  is the number of letters in your last name.

Barbecuits use 7.5 units of source I and 7.5 units of Source II. Mighty Meaties use 5 units of Source I and 10 units of Source II. Carnivore Cravings use 11 units of Source I and 4 units of Source II.

Based on this information, I would like you to calculate the total amount of calcium, protein and carbohydrates in each of the kinds of biscuits. To help you solve this problem, I am outlining a strategy which you should follow and document carefully.

1. Put the source and ingredient information in a matrix with the rows and columns labeled appropriately.
2. Put the biscuit and source information into a matrix with the rows and columns labeled appropriately.
3. Using the matrices from parts 1 and 2, use matrix multiplication to calculate the total amount of calcium, protein and carbohydrates in each of the kinds of biscuits. Label the rows and columns of the product.

We look forward to your technical memo on this matter. Be sure to follow the strategy above, expanding on it as needed. A scientific expert (your instructor) is available to answer any questions that you might have in the course of your investigations. You should consult with this expert as needed. This expert will not be available to assist on this project over the weekend before it is due.

Sincerely,  
Gram D. Canis , Biscuit Bistro