Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Bringing Meaning to Composition of Functions

**Prompt 1:** *Think of one of your favorite stores…*

Today, your favorite store is selling every clearance item for $10.00 off! The store is running a promotion where all students receive a 15% off discount today as well. If you are shopping today and want to purchase an item that is on clearance for $24.99, how much will you have to pay? Be sure to show and explain your thought process clearly.

Consider the same situation. Let x represent the cost of any item in the store. Define two functions, f(x) and g(x) respectively to represent the cost of each clearance item and the cost with the student discount.

How do these functions compare, and how do they relate to the solution to the original problem?

**Prompt 2:** *Think of your favorite charity…*

This month, the organizers of the charity will donate (out of pocket) an additional 85% of all donations. This will form a “combined donation.” For any donations submitted by students, the organizers of the charity will donate (out of pocket) $15.00 more than the combined donation amount.

Define and explain two functions to represent this situation. Let x represent the original amount of any given donation.

Assume you donate (as a student) to the charity. Determine a function that can be used to figure out the total amount you and the charity organizers will donate together.