

7. [8 points] Consider the three functions described below.

- The local animal shelter has a number of dogs available that people can adopt for free. The weight of a dog at the animal shelter is a function of its length. Let $f(L)$ be the weight, in pounds, of a dog at the animal shelter that is L inches long.
- There is also a dog washing service. The amount they charge to wash a dog is a function of the dog's weight. Let $g(W)$ be the price, in dollars, they charge to wash a dog that weighs W pounds.
- The amount of food a dog eats is a function of the dog's weight. Let $h(W)$ be the cost, in dollars, of a month's supply of food for a dog that weighs W pounds.

Assume that f , g , and h are invertible functions. Fill in each blank below with an appropriate expression. The expression may involve one or more of the functions defined above.

Example: If you have a dog that weighs 29 pounds, it will cost $h(29)$ dollars to buy a month's supply of food for your dog.

a. [2 points] You are considering adopting a dog that is 34 inches long. That dog weighs

_____ pounds.

b. [2 points] You have a dog that weighs 25 pounds. If you get your dog washed, and then

buy a month's supply of food for it, you will spend a total of _____ dollars.

c. [2 points] For \$30, you can buy a month's supply of food for a dog that weighs

_____ pounds.

d. [2 points] If you adopt a dog that is 18 inches long and want to get it washed, it will cost

you _____ dollars.