

## 1.1 Brutus Bites Back

### *A Develop Understanding Task*

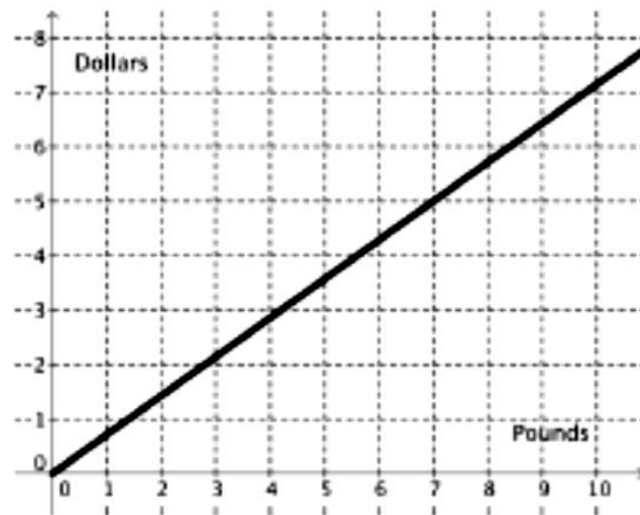
Remember Carlos and Clarita? A couple of years ago, they started earning money by taking care of pets while their owners are away. Due to their amazing mathematical analysis and their loving care of the cats and dogs that they take in, Carlos and Clarita have made their business very successful. To keep the hungry dogs fed, they must regularly buy Brutus Bites, the favorite food of all the dogs.



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Carlos and Clarita have been searching for a new dog food supplier and have identified two possibilities. The Canine Catering Company, located in their town, sells 7 pounds of food for \$5.

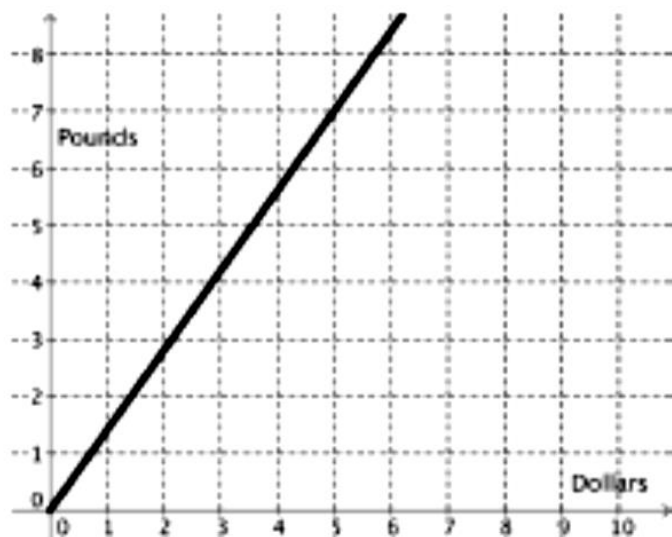
Carlos thought about how much they would pay for a given amount of food and drew this graph:



1. Write the equation of the function that Carlos graphed.



Clarita thought about how much food they could buy for a given amount of money and drew this graph:



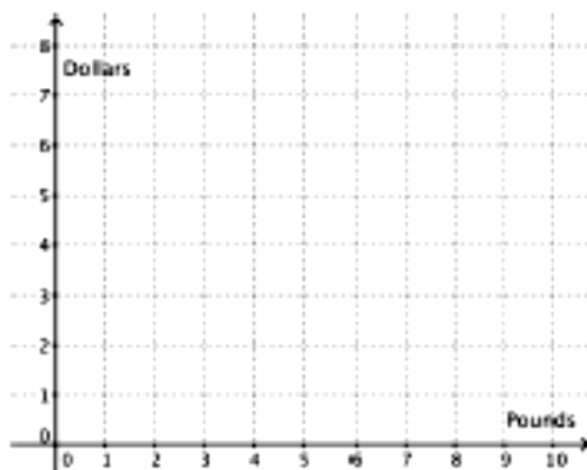
2. Write the equation of the function that Clarita graphed.
  
  
  
  
  
  
  
  
  
  
3. Write a question that would be most easily answered by Carlos' graph. Write a question that would be most easily answered by Clarita's graph. What is the difference between the two questions?
  
  
  
  
  
  
  
  
  
  
4. What is the relationship between the two functions? How do you know?



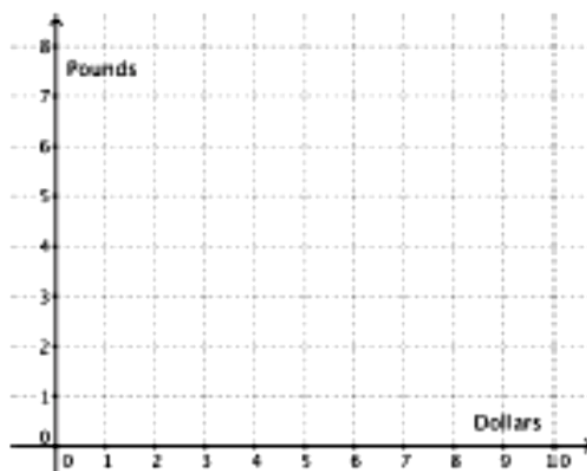
5. Use function notation to write the relationship between the functions.

Looking online, Carlos found a company that will sell 8 pounds of Brutus Bites for \$6 plus a flat \$5 shipping charge for each order. The company advertises that they will sell any amount of food at the same price per pound.

6. Model the relationship between the price and the amount of food using Carlos' approach.



7. Model the relationship between the price and the amount of food using Clarita's approach.



8. What is the relationship between these two functions? How do you know?
  
9. Use function notation to write the relationship between the functions.
  
10. Which company should Clarita and Carlos buy their Brutus Bites from? Why?