**COMPOSITION OF FUNCTIONS**

You just received a mystery discount coupon for a local department store. When the discount was revealed you were in luck, it was a 30% discount on all purchases. (Neglect sales tax in this application).

1. If your retail price for all merchandise purchased today is $105. 00 how much money do you need to give to the cashier? Show your work.
2. Define the discount function, $D\left(x\right) $symbolically that represents the amount spent at the store based on a retail price of $x$ dollars.
3. Now let’s say you have $20.00 in Krazy Cash for this same store. If you only used this “purchase perk” how much money would you need to give the cashier?
4. Define the Krazy cash function, $K\left(x\right) $symbolically that represents the amount spent at the store based on a retail price of $x$ dollars.
5. Let’s now say that the store will allow you to use both the 30% discount and your $20.00 Krazy Cash for your purchase, the $20. Krazy Cash first followed by the 30%. If you bought $105.00 dollars today how much money would you give the cashier? Show your work.
6. Define the composition $(D∘K)(x)$ symbolically
7. Evaluate$(D∘K)(105)$. Does this agree with your answer to part E? Explain.
8. Now let’s assume the store will allow you to use the discount first followed by the $20.00 Krazy cash. If you bought $105.00 dollars today how much money would you give the cashier? Show your work.
9. Is this the same result as your answer in part E? Explain.
10. Define this composition as $(K∘D)(x)$ . Form this new composition symbolically.

1. Evaluate $(K∘D)(105)$.
2. Which is the better deal?