Rich Task Piecewise and Step functions

You are purchasing pumpkins, and gourds for your Thanksgiving party. The Pumpkin Patch charges the following prices per pound.

$$C(x) = \begin{cases} 11.75, & \text{if } 0 < x \le 8 \\ 15.75, & \text{if } 8 < x \le 32 \\ 18.50, & \text{if } 32 < x \le 48 \\ 21.25, & \text{if } 48 < x \le 64 \\ 24.00, & \text{if } 64 < x \le 80 \end{cases}$$

1. Is this a piecewise or step function?

2. What is the domain (x) of the function?

3. What is the range (y) of the function?

4. What would it cost if your weight was 60 pounds?

5. What would it cost if the weight was 64 pounds?

PHOTOCOPY RATES In Exercises 6-10 use the function given for the cost C (in dollars) of making x photocopies at a copy shop.

$$C(x) = \begin{cases} 0.15x, & \text{if } 0 < x \le 25 \\ 0.10x, & \text{if } 26 \le x \le 100 \\ 0.07x, & \text{if } 101 \le x \le 500 \\ 0.05x, & \text{if } 501 \le x \end{cases}$$

6. Is this a piecewise or step function?

7. What is the domain (x) of the function?

8. What is the range (y) of the function?

9. What would cost if you needed 450 copies?

10. Would it be better to get 501 copies rather than 450?

11. Your class is having a fundraiser. You want to place an order with T-shirts.com. They charge you a screen print charge of $10 and then $8/shirt for orders less than 50 t-shirts. If you buy 50 or more shirt, they charge you $5/shirt. Write a piecewise function and graph it.

total cost

shirts

1