4. A supermarket has a discount on "family packs" of meat. Chicken costs $2.00/lb for packages over 5 lb. Smaller packages are $2.50/lb. Express the cost as a function of weight.

a. What are the dependent and control variables?

b. Write the piecewise function $C(w)$.

c. Graph the function. Label your axis.

d. Find $C(3.5)$ and $C(6)$.

5. The amount of Social Security tax you pay, part of your Federal Insurance Contributions Act deductions, depends on your annual income. As of 1999 you pay 6.2% of your income if it is less than $72,600. If your income is at least $72,600, you pay a fixed amount of $4501.20.

a. What are the control and dependent variables?

b. Write the piecewise function.

c. Graph the piecewise function. Label your axis.

d. If Ms. Howard made $33,000 last year, how much did she pay in social security?
7. A cell phone company charges $49.99 a month for up to 500 minutes. If a family talks up to 600 minutes their bill jumps to $69.99 and if they talk up to 1000 minutes their bill is $99.99.

   a. What are the dependent and control variables?

   b. Write a piecewise function.

   c. Graph the function. Label your axis.
4. A supermarket has a discount on "family packs" of meat. Chicken costs $2.00/lb for packages over 5 lb. Smaller packages are $2.50/lb. Express the cost as a function of weight.

a. What are the dependent and independent variables?

\[ C \text{ vs. } w \]

b. Write the piecewise function \( C(w) \).
\[ C(w) = \begin{cases} 2.5w & \text{if } w \leq 5 \\ 2w & \text{if } w > 5 \end{cases} \]

c. Graph the function. Label your axis.

\[ C(3.5) = 2.5(3.5) = 8.75 \]
\[ C(6) = 2(6) = 12 \]

5. The amount of Social Security tax you pay, part of your Federal Insurance Contributions Act deductions, depends on your annual income. As of 1999 you pay 6.2% of your income if it is less than $72,600. If your income is at least $72,600, you pay a fixed amount of $4501.20.

a. What are the control and dependent variables?

\[ \text{pay} \xleftarrow{\text{independent}} \text{tax you pay} \]

b. Write the piecewise function.
\[ f(x) = \begin{cases} \frac{0.062x}{100} & \text{if } x < 72,600 \\ 4501.20 & \text{if } x \geq 72,600 \end{cases} \]

c. Graph the piecewise function. Label your axis.

d. If Ms. Howard, made $33,000 last year, how much did she pay in social security?
\[ f(33,000) = \frac{0.062\times 33,000}{100} = 2,046 \]
7. A cell phone company charges $49.99 a month for up to 500 minutes. If a family talks up to 600 minutes their bill jumps to $69.99 and if they talk up to 1000 minutes their bill is $99.99.

a. What are the dependent and independent variables?

↓    ↓
Cost  minutes

b. Write a piecewise function.

\[ f(x) = \begin{cases} 
99.99 & \text{if } x \leq 500 \\
69.99 & \text{if } \frac{600}{600} \\
99.99 & \text{if } \frac{600}{600} < x < 1000 \\
50 & \text{if } \frac{600}{600} \leq x < 600 \\
\end{cases} \]

c. Graph the function. Label your axis.