Example 1 p27: Laundry. Suppose you are washing and drying clothes at a self-servic laundry. The relationship between the number of loads (input) and the cost (output) is a function Use the table to write a function rule.

L	1	2	3	4
C(L)	2.75	5.50	8.25	11.00

Since $\frac{\Delta C(L)}{\Delta L} = \frac{2.75}{1} = 2.75$, we have the equation $C(L) = 2.75L + b$. Since $C(1) = 2.75(1) + b = 2.75$ means $b = 0$ then $C(L) = 2.75L + b = 2.75L + 0 = 2.75L$. So, $C(L) = 2.75L$. Now we check it with the values in the table and we have,

$$C(1) = 2.75(1) = 2.75$$
$$C(2) = 2.75(2) = 5.50$$
$$C(3) = 2.75(3) = 8.25$$
$$C(4) = 2.75(4) = 11.00$$

Example 2 p28: The relationship between the number of houses (input) and the number of toothpicks (output) is a function rule.

H	1	2	3	4
T(H)	6	11	16	21

Since $\frac{\Delta T(H)}{\Delta H} = \frac{5}{1} = 5$, we have the equation $T(H) = 5H + b$. Since $T(1) = 5(1) + b = 6 \Rightarrow$ $T(1) = 5 + b = 6 \Rightarrow b = 1$. So that $T(H) = 5H + b = 5H + 1$. Now we check it with the values in the table and we have,

$$T(1) = 5(1) + 1 = 6$$
$$T(2) = 5(2) + 1 = 11$$
$$T(3) = 5(3) + 1 = 16$$
$$T(4) = 5(4) + 1 = 21$$

#1 p29:

	Cans(C)	Servings(S)	
	1	4	
1	2	8	4
1	3	12	4
1	4	16	4

So, we have $S(C)=\frac{4}{1}C+b=4C+b$. We know $S(1)=4$. Since $S(1)=4(1)+b=4$ then $4+b=4$ and $b=0$. Thus, our equation is $S(C)=4C$.

#2 p29:

	Cans(O)	Cost(C)	
	1	1.25	
1	2	2.50	1.25
1	3	3.75	1.25
1	4	5.00	1.25

So, we have $C(O)=\frac{1.25}{1}O+b=1.25O+b$. We know $C(1)=1.25$. Since $C(1)=1.25(1)+b=1.25$ then $1.25+b=1.25$ and $b=0$. Thus, our equation is $C(O)=1.25O$.

#3 p29:

	Hours(H)	Cost(C)	
	1	65	
1	2	90	25
1	3	115	25
1	4	140	25

So, we have $C(H)=\frac{25}{1}H+b=25H+b$. We know $C(1)=65$. Since $C(1)=25(1)+b=65$ then $25+b=65$ and $b=40$. Thus, our equation is $C(H)=25C+40$.

#4 p29:

Time(T)	Cost(C)
1	10
2	16
3	22
4	28

1< 1< 1<

>6 >6 >6

So, we have $C(T)=\frac{6}{1}H+b=6H+b$. We know $C(1)=10$. Since $C(1)=6(1)+b=10$ then $6+b=10$ and $b=4$. Thus, our equation is $C(T)=6C+4$.

#9 p30:

Minutes(M)	Words(W)
1	125
2	250
3	375
4	500
5	625

1< 1< 1< 1<

>125 >125 >125 >125

So, we have $W(M)=\frac{125}{1}M+b=125H+b$. We know $W(1)=125$. Since $W(1)=125(1)+b=125$ then $125+b=125$ and $b=0$. Thus, our equation is $W(M)=125M$.

#10 p30:

Hours(H)	Cost(C)
1	15
2	27
3	39
4	51
5	63

1< 1< 1< 1<

>12 >12 >12 >12

So, we have $C(H)=\frac{12}{1}H+b=12H+b$. We know $C(1)=15$. Since $C(1)=12(1)+b=15$ then $12+b=15$ and $b=3$. Thus, our equation is $C(H)=12M+3$.