

Name _____

Date _____

Graphs of Proportional Relationships - Guided Lesson Explanation**Explanation#1**

Step 1) First we look to see what is being asked of us.

“What is the constant of proportionality?”

Step 2) Linear functions are in the form $y = mx + b$.

Step 3)

Data	2	3	4	5	
Packs	4	8	12	16	20
Cost	16	32	48	64	80

First find m . Look at the table and notice that every time the x term (packs) go up by 1, the y term (cost) go up by 4. This means that m is equal to 4.

Next find b . Take the equation $y = mx + b$ and plug in the m value ($m = 4$) and a pair of (x, y) coordinates from the table, such as $(4, 16)$. Then solve for b .

$$Y = mx + b$$

$$16 = 4(4) + b$$

$$\text{Plug in } m = 4, x = 4, \text{ and } y = 16$$

$$16 = 16 + b$$

$$0 = b$$

Finally, use the m and b values you found ($m = 4$ and $b = 0$) to write the equation.

$$Y = mx + b$$

$$Y = 4x + 0 \quad \text{Plug in } m = 4 \text{ and } b = 0$$

$$Y = 4x$$



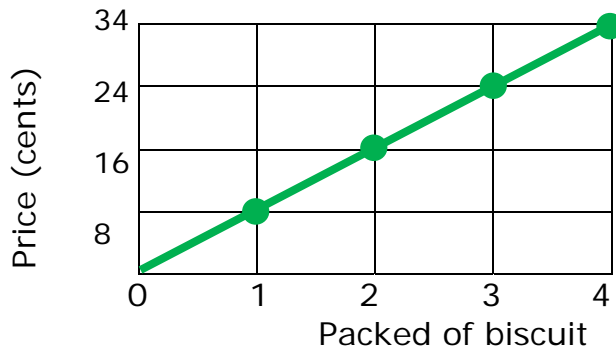
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Explanation#2

Step 1) Linear functions are in the form $y = mx + b$.

Step 2) First find m . Look at the table and notice that every time the x terms go up by 1, the y terms go up by 8. This means that m is equal to 8.



Next find b . Take the equation $y = mx + b$ and plug in the m value ($m = 8$) and a pair of (x, y) coordinates from the table, such as $(1, 8)$. Then solve for b .

$$Y = mx + b$$

$$8 = 8(1) + b \quad \text{Plug in } m = 8, x = 1, \text{ and } y = 8$$

$$8 = 8 + b$$

$$0 = b$$

Finally, use the m and b values you found ($m = 8$ and $b = 0$) to write the equation.

$$Y = mx + b$$

$$Y = 8x + 0 \quad \text{Plug in } m = 8 \text{ and } b = 0$$

$$Y = 8x$$



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Explanation#3

Step 1) Linear functions are in the form $y = mx + b$.

Step 2)

Data	1	2	3	4	5	6
Packed	3	6	9	12	15	18
Cost	10	20	30	40	50	60

First find m . Look at the table and notice that every time the x terms go up by 3, the y terms go up by 10. This means that m is equal to 10.

Next find b . Take the equation $y = mx + b$ and plug in the m value ($m = 3.33$) and a pair of (x, y) coordinates from the table, such as $(3, 10)$. Then solve for b .

$$Y = mx + b$$

$$10 = 3.33... (3) + b$$

Plug in $m = 3.33...$, $x = 3$, and $y = 10$

$$10 = 10 + b$$

$$0 = b$$

Finally, use the m and b values you found ($m = 3.33$ and $b = 0$) to write the equation.

$$Y = mx + b$$

$$Y = 3.33...x + 0 \quad \text{Plug in } m = 3.33 \text{ and } b = 0$$

$$Y = 3.33...x$$

