Practice with Functions and Tables

Just the Basics ~

_____ is the relation between 2 quantities that are proportional (they have the same unit rate).

_____ represents the "constant of proportionality," or unit rate. As x and y values change, this stays the same.

When one variable increases, the other variable _____.

If your y values are smaller than your x values, this means that k must be a _____ or a _____.

Using the given rules, find the missing **x** and ***y*** values.

1) ***y* = 9x**

x	0	2	3	5	8
y					

2) ***y* = 12x**

x	1		6		12
y		48		120	

3) ***y* = 1.25x**

x	0	2	4	6	8
y					

4) $y = \frac{2}{5}x$

x	0	4	9		20
y				4	

Using the given values, determine the equations in terms of *y=kx*

5) Rule: _____

x	0	1	2	3	4
y	0	5	10	15	20

How do you know this rule works?

_____

_____

6) Rule: _____

x	1		6		12
y		48		120	

How do you know this rule works?

_____

_____

Direct Variation Problem Solving

1) Vanessa is purchasing tickets to a Bebe Rexha concert. Tickets cost $35 apiece.

What is the constant of variation, ***k***? **$35**

x, the input/ind. variable represents: **# of Tickets Purchased**

y, the output/dep. variable represents: **Total Cost**

What direct variation equation represents this situation?

y = 35x

Complete the chart below using your equation.

x	0	2	3	4	6
y	**0**	**70**	**105**	**140**	**210**

2) TJ is saving up for a new Fortnite skin. He earns $7.50 for each chore he does.

What is the constant of variation, ***k***? **$7.50**

x, the input/ind. variable represents: **How many chores done**

y, the output/dep. variable represents: **Total Earned**

What direct variation equation represents this situation?

y = 7.50x

Complete the chart below using your equation.

x	0	2	10	15	50
y	**0**	**15**	**75**	**112.50**	**375**

3) There are 37 boys in the drama club. They want to buy new props, so they are all going to pitch in some money. They all want to pitch in the same amount.

What is the constant of variation, ***k***? **37 boys**

x, the input/ind. variable represents: **Amount pitched in**

y, the output/dep. variable represents: **Total money made**

What direct variation equation represents this situation?

y = 37x

Complete the chart below using your equation.

x	0	2	3	5	10
y	**0**	**74**	**111**	**185**	**370**

4) The students in math class earn one Jolly Rancher for every 3 homework assignments that they complete.

What is the constant of variation, ***k***? **3**

x, the input/ind. variable represents: **How many assignments complete**

y, the output/dep. variable represents: **Total Jolly Ranchers**

What direct variation equation represents this situation?

y = 1/3 x

Complete the chart below using your equation.

x	0	3	9	18	27
y	**0**	**1**	**3**	**6**	**9**

5) The direct variation ALWAYS uses the formula ***y = kx***

Therefore, when x = 0, y always equals **zero**.

Graphing Direct Variation

In direct variation, your (x,y) data creates ordered pairs that can be graphed.

A direct variation graph will **ALWAYS** begin at the point (____,____).

A direct variation graph will **ALWAYS** be a _____ _____.

Example:

Anthony is selling lemonade for $2 per cup. Write an equation.

$y = 2x$

y represents the total $ made; this is the *output*, or dependent variable

2 is the constant (k)

x represents how many cups are sold; this is the *input*, or the *independent* variable

x (cups sold)	y ($)
0	0
1	2
2	
4	

Graph the ordered pairs.