

## DIRECT vs. PARTIAL VARIATION

<p>Example 1: Stephen works at a hardware store and earns \$9.25 for each hour he works. Let E represent his Earnings, and h represent the number of hours he works.</p>	<p>Example 2: Popcorn pops, on average, at a rate of 4 kernels per second. Let P represent the amount of popcorn kernels popped, and s represent the number of seconds.</p>	<p>Example 3: Branley works in sales and earns commission of 2% on the merchandise she sells. Define your variables and write an equation.</p>
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These are the examples of \_\_\_\_\_. In example 1, E varies \_\_\_\_\_ with the number of hours. The graph of a direct variation relationship is a straight line through the \_\_\_\_\_. The equation is in the form \_\_\_\_\_

<p>Example 4: Rio works at a local gym as a personal trainer. She earns \$50 each shift and an additional \$35 per hour of personal training. Let E represent her earnings, and h represent the number of p.t. hours.</p>	<p>Example 5: Rhys' bank account has \$500. Each month he spends \$50. Let B represent his balance, and let m represent the number of months that have passed.</p>	<p>Example 6: Jessee repairs computer problems and charges a \$50 service fee plus \$30 per hour. Let F represent her total fee, and h represent the number of hours worked.</p>
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These are the examples of \_\_\_\_\_. In example 5, B varies \_\_\_\_\_ with the number of months. The graph of a **partial variation** relationship is a straight line that \_\_\_\_\_. The equation is in the form \_\_\_\_\_

Situation	Equation	D or P
a) A cookie recipe makes 12 cookies for each egg in the recipe.		
<b>b) An airplane was at an altitude of 1700m and is descending at 50m per minute.</b>		
c) Danillo works as a tree planter for the government. He can plant 900 trees in a day.		
<b>d) A cell phone plan is \$20 per month but excludes text messaging. Each text message costs 20 cents.</b>		
e) Meher cuts lawns in the summer and earns \$15 for every lawn she cuts.		
<b>f) A banquet hall charges \$500 for the hall rental and \$32.50 per person.</b>		

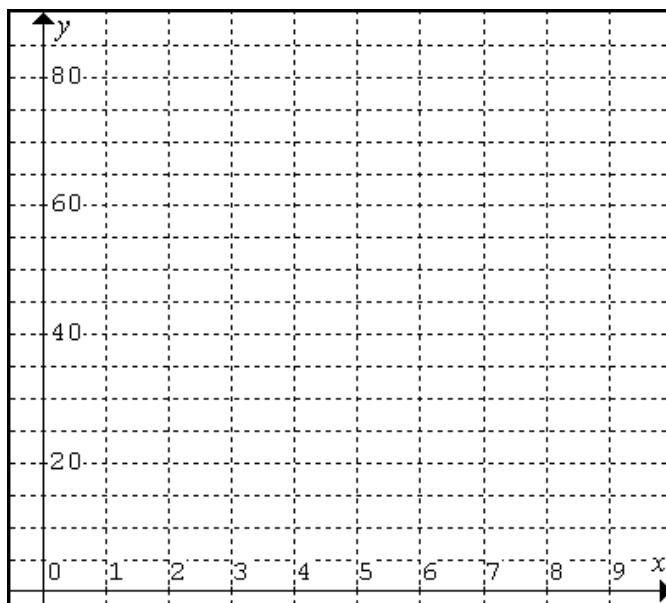
**DIRECT VARIATION**

**Example 1**

The new Mazda 3 Sport has gas mileage of 6 km per litre on highway. This can be modelled by the algebraic equation  $d=7.6n$ , where  $d$  represents the distance you can travel and  $n$  represents the number of litres you use.

Complete the table of values for the distance per number of litres and use your table to create a graphical model of this scenario.

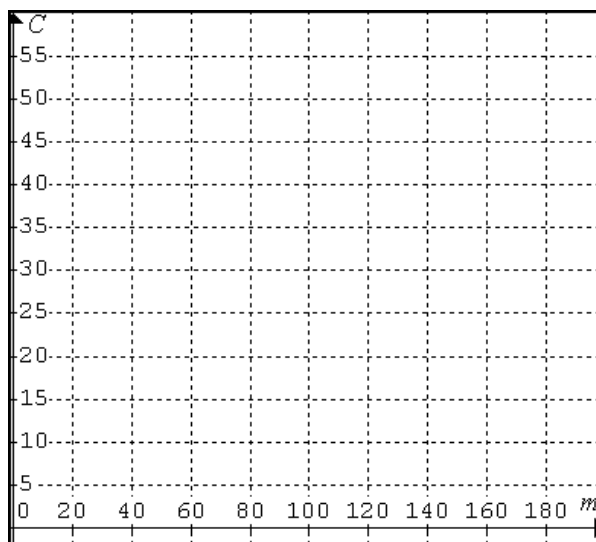
n	d = 6n
0	
1	
2	
3	
4	
5	



**Example 2**

Dooko Mobile Company does not charge any monthly fees, but charges \$0.25 per minute of cell phone use. Model this scenario algebraically.

Create a table of values using your equation and create a graphical model.



### PARTIAL VARIATION

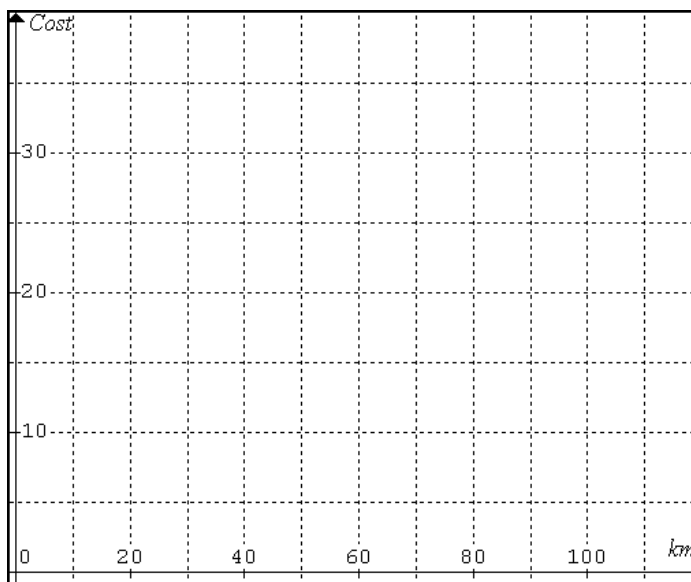
#### Example 1

A taxi company charges a flat rate of \$2.50 plus \$0.35/km. The cost can be found using the equation \_\_\_\_\_, where C represents the cost and k represents the number of kilometres.



Using the equation, complete a table of values. Using your table of values, create the graph.

k	C
0	
20	
40	
60	
80	
100	



#### Example 2

KeeDe Mobile Company charges \$20 per month and an additional \$0.25 per minute of long distance calls. Model this scenario algebraically.

Create a table of values using your equation and create a graphical model.

