5.10: DIRECT vs. PARTIAL VARIATION

Example 1:	Example 2:	Example 3:
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.	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.	Branley works in sales and earns commission of 2% on the merchandise she sells. Define your variables and write an equation.

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 _____

Example 4:	Example 5:	Example 6:
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.	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.	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.

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

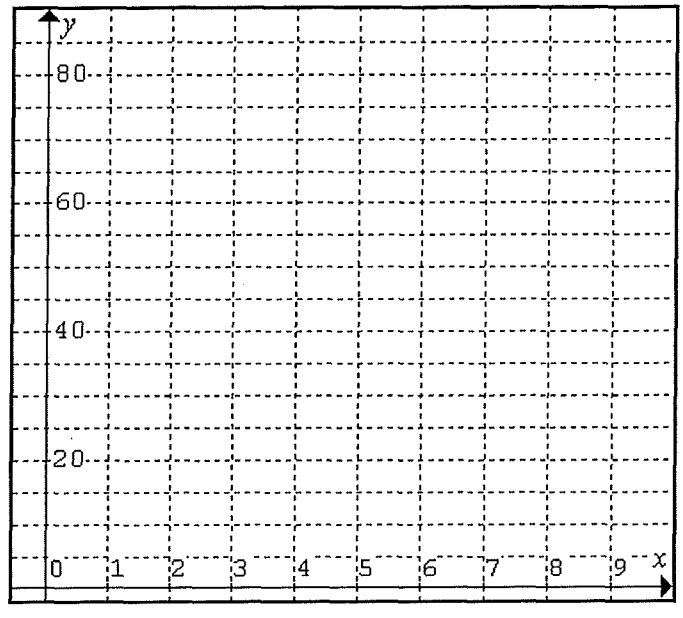
DIRECT VARIATION

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.

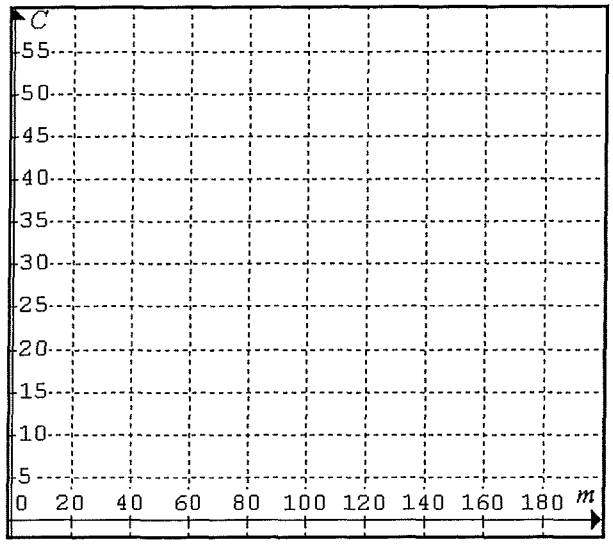
n	d = 6n
0	
1	
2	
3	
4	
5	



Example 2

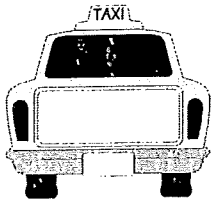
Dooko Mobile Company does not charge any monthly fees, but charges $0.25 per minute of cell phone use. Model this scenario algebraically.

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



PARTIAL VARIATION

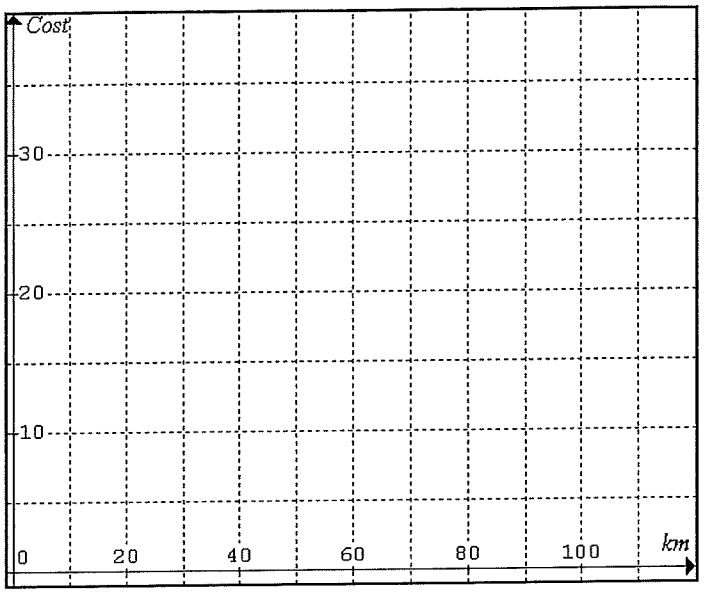
Example 1



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.