Name: _____

Date: _____ Group: _____

Linear Relations Between Two Variables
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Support Sheet

A ski hill offers the following package: $100 season registration fee and $15 for a day pass. You want to determine how much the ski season will cost based on the number of days you plan to ski.

a) The dependent variable is the one that varies according to the values attributed to the independent variable. Identify the dependent variable in this situation.

_____

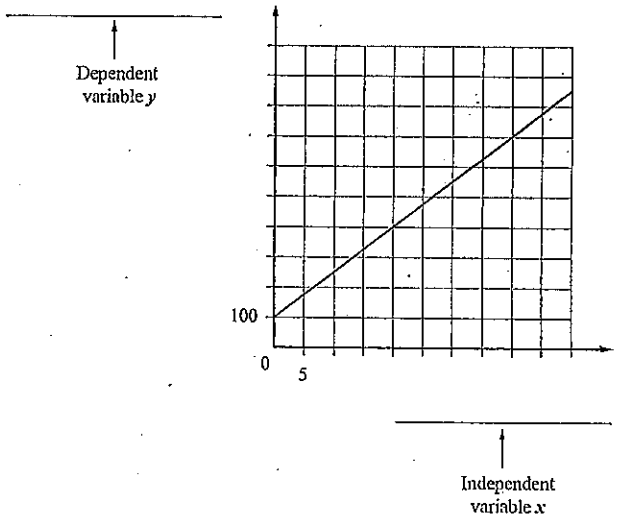
b) Complete the table of values.

Independent variable →

10	
15	
20	
25	
30	
35	
40	
x	

← Dependent variable

c) Use a graph to represent the relation. Identify the axes.



The intervals on an axis must be constant.

The scales can be different on the two axes.

Example: For the x-axis in the graph on the left, each box corresponds to an interval of 5 while, for the y-axis, each box corresponds to an interval of 100.

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Support Sheet (*continued*)

d) We reproduced a portion of the table of values to help you calculate the rate of change. Complete the table and calculate the variations for the variables x and y, then calculate the rate of change.

x	y
10	
15	
20	

Rate of change $= \dfrac{\text{change in } y}{\text{change in } x}$, that is, $a =$ _____

e) What is the initial value that corresponds to the cost if you do not ski a single day during the season? _____

f) Write the rule in the form of $y = ax + b$ representing the relation between the cost (y) and the number of ski days (x). _____

g) Using the relation found in **f)**, calculate:

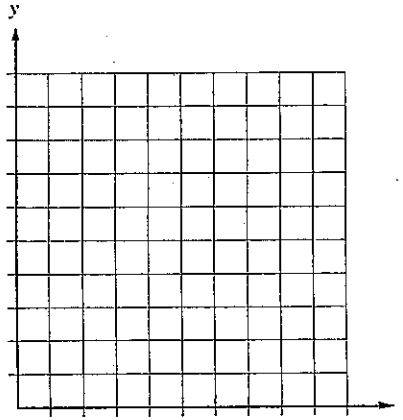
1) how much you would pay for 17 ski days? _____

2) how many days you would have spent on the slopes if you paid $520? _____

See What I Know

a) Plot the graph of the relation corresponding to the table of values.

x	0	1	2	4	5	6
y	?	50	70	110	130	150



b) 1) Calculate the rate of change.

_____

2) Calculate the initial value by finding the value of y when $x = 0$.

_____

3) Write the rule representing the relation between x and y.

_____