

Worksheet: Linear Situations

1) Napoleon has \$40.00 saved up already. To earn more money, he plans to start mowing lawns. He will earn \$12.00 for each lawn he mows.

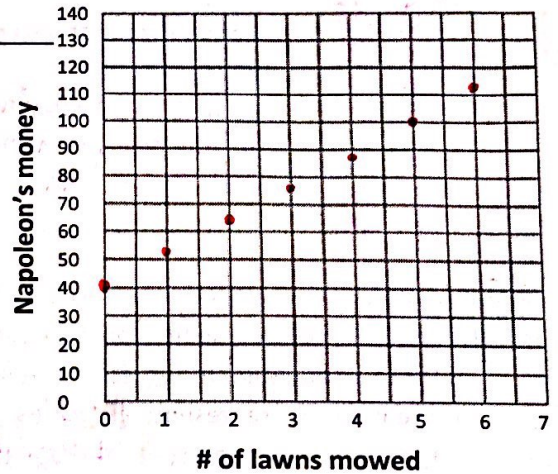
- a) Write an equation to represent the situation: $y = 12x + 40$
 b) The inputs (x) represent: # of lawns mowed
 c) The outputs (y) represent: amount of money Napoleon has
 d) The slope is 12 and it represents \$ earned per lawn mowed
 e) The y-intercept is 40 and it represents the amount Napoleon has already saved
 f) Make a table.

x	y
0	40
1	52
2	64
3	76
4	88
5	100
6	112

g) Graph.

- h) Should you connect your points?
 Why or why not?

No; he will probably get paid all at once instead of gradually.



Notice: The y-axis is not scaled by 12's. Nobody scales graphs by 12's. You should always use a "common" number, like 1's, 2's, 5's, 10's, 20's, 100's, etc. You will have to estimate where the points go.

2) Napoleon is now mowing one of the lawns. All together, the lawn has an area of 1300 square feet. Napoleon is able to mow 150 square feet of the grass per minute.

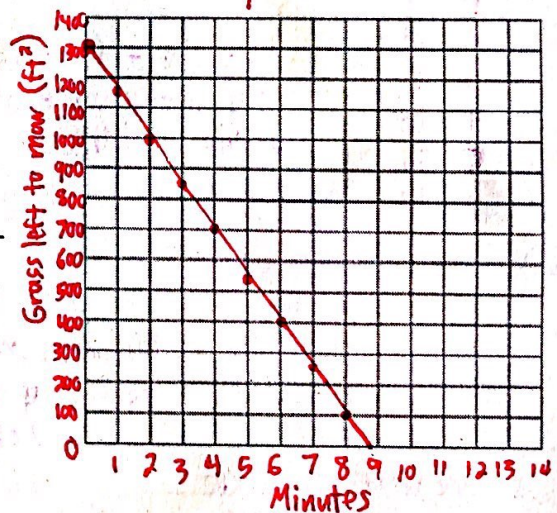
- a) Write an equation to represent the how many square feet are LEFT unmowed: $y = 1300 - 150x$ (or $y = -150x + 1300$)
 b) The inputs (x) represent: # of minutes
 c) The outputs (y) represent: amount of grass left to mow
 d) The slope is -150 and it represents he mows 150 ft² per minute
 e) The y-intercept is 1300 and it represents the total amount he has to mow
 f) Make a table.

x	y
0	1300
1	1150
2	1000
3	850
4	700
5	550
6	400

g) Graph. Make sure you label your axes.

- h) Should you connect your points?
 Why or why not?

Yes; he would mow part of the 150 ft² in part of a minute. The numbers in between make sense.



3) The temperature at 6:00 AM is 35°F. Each hour, the temperature rises by 4°F.

- a) Write an equation to represent the situation: $y = 35 + 4x$ or $y = 4x + 35$
 b) The inputs (x) represent: # of hours
 c) The outputs (y) represent: temperature (°F)
 d) The slope is 4 and it represents the temperature increase per hour
 e) The y-intercept is 35 and it represents the original temperature at 6:00

(continued on back)

f) Make a table.

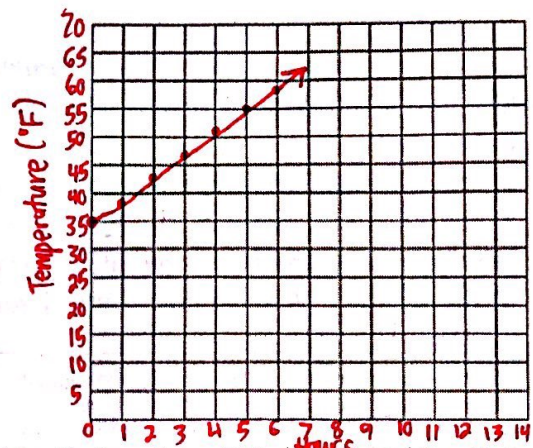
x	y
0	35
1	39
2	43
3	47
4	51
5	55
6	59

g) Graph. Make sure you label your axes.

h) Should you connect your points?

Why or why not?

Yes; the temp. rises gradually -
it will raise part of the 4° in
part of an hour.



4) Pedro is making chocolate chip cookies. He has a bag of chocolate chips that contains 250 chocolate chips. He is very particular about his cookies, so he makes sure that there are exactly 7 chocolate chips in each cookie.

a) Write an equation to represent the number of chocolate chips used: $y = 7x$

b) The inputs (x) represent: # cookies made

c) The outputs (y) represent: # chocolate chips used

d) The slope is 7 and it represents # chocolate chips
used per cookie

e) The y-intercept is 0 and it represents If he makes
0 cookies, he will use 0 chocolate chips

f) Make a table.

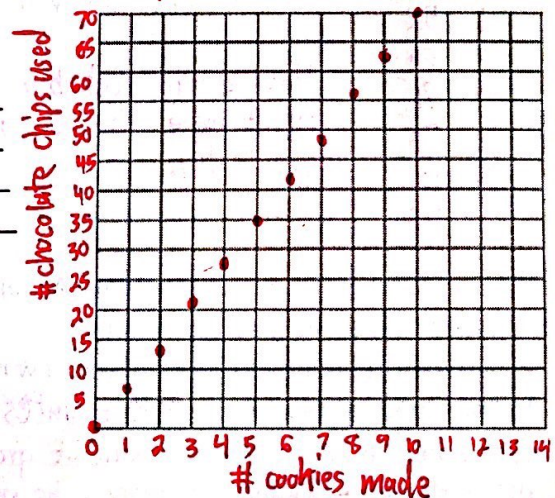
x	y
0	0
1	7
2	14
3	21
4	28
5	35
6	42

g) Graph. Make sure you label your axes.

h) Should you connect your points?

Why or why not?

No; the # of cookies would
only make sense with
whole numbers.



5) Use the same situation as #4.

a) Write an equation to represent the number of chocolate chips left in the bag: $y = 250 - 7x$

b) The inputs (x) represent: # cookies made

c) The outputs (y) represent: # chocolate chips left

d) The slope is -7 and it represents 7 chocolate chips
are used per cookie

e) The y-intercept is 250 and it represents the original
amount of chocolate chips in the bag

f) Make a table.

x	y
0	250
1	243
2	236
3	229
4	222
5	215
6	208

g) Graph. Make sure you label your axes.

h) Should you connect your points?

Why or why not?

No; the # of cookies only makes
sense with whole numbers.

