



Warm Up Grade 8
Oct. 27, 2016



The equation of a linear relation is: $y = -4x + 1$

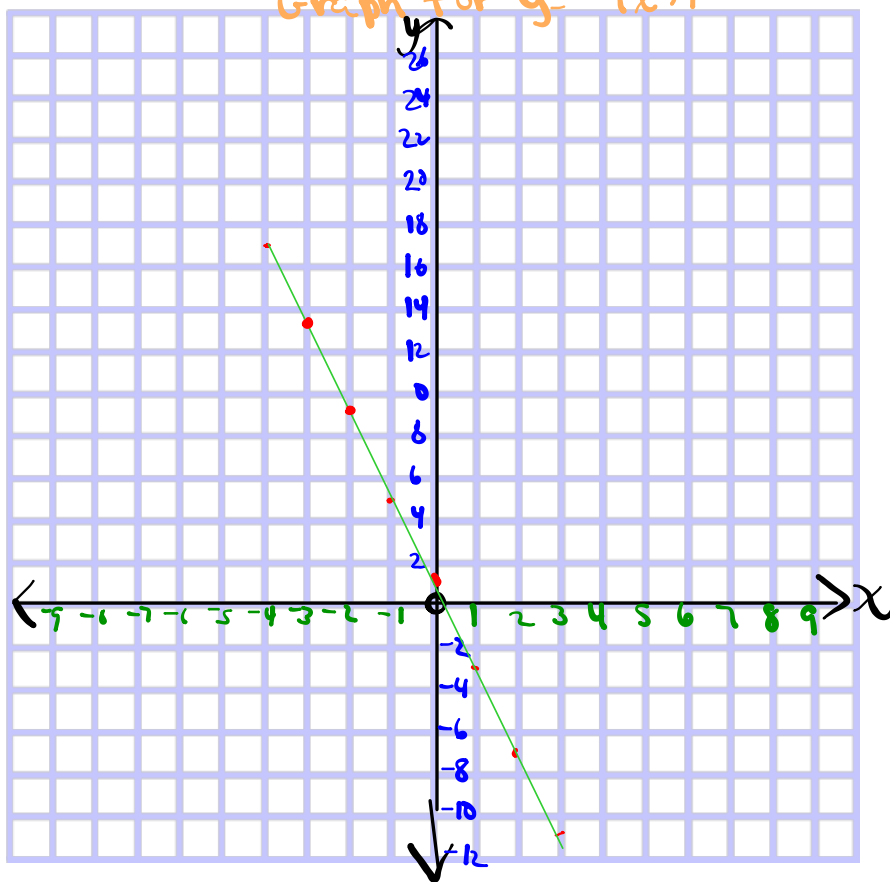
- a) Create a table of values for the relation for integer values of x from -4 to 4.
- b) Graph the relation.
- c) Describe the relationship between the variables in the graph.

$y = -4(x) + 1$

x	y
-4	17
-3	13
-2	9
-1	5
0	1
1	-3
2	-7
3	-11
4	-15

Handwritten notes:
 - Blue arrows pointing right from x to y: "increase by 1"
 - Blue arrows pointing left from y to x: "decrease by 4"
 - Red calculations:
 $x = -4$
 $y = -4(x) + 1$
 $= -4(-4) + 1$
 $= +16 + 1$
 $= 17$
 $x = -3$
 $y = -4(x) + 1$
 $= -4(-3) + 1$
 $= +12 + 1$
 $= 13$
 $x = -2$
 $y = -4(x) + 1$
 $= (-4)(-2) + 1$
 $= +8 + 1$
 $= +9$

Graph for $y = -4x + 1$



x	y
-4	17
-3	13
-2	9
-1	5
0	1
1	-3
2	-7
3	-11
4	-15

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1. No you can not have negatives since you can not have a negative number of girls and boys.
2. You can only have whole number values, so you don't connect the points.
3. The banding would be on opposite sides, and the graph would be the same.

4a) $y = 4x - 1$

Input	Output
x	y
0	-1
1	3
2	7
3	11
4	15

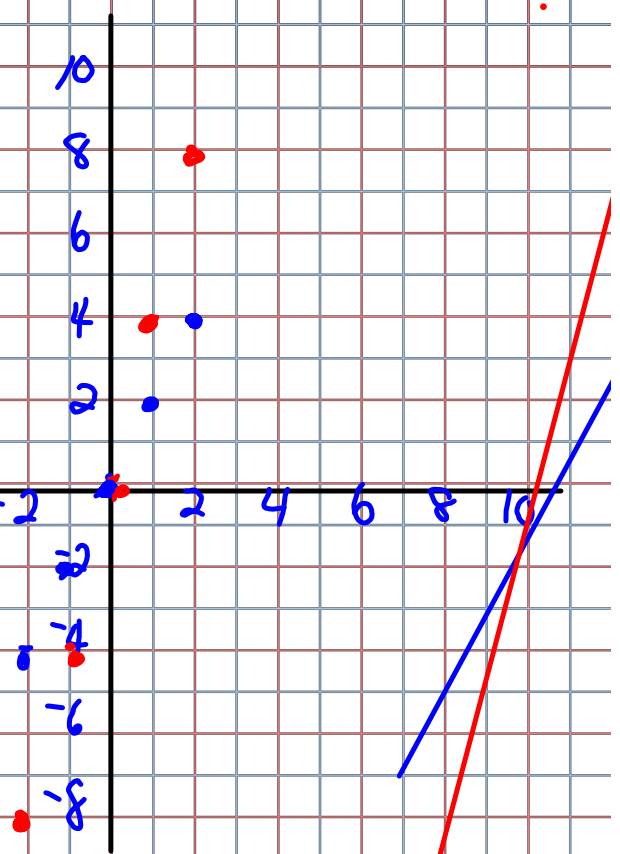
x goes up by 1,
 y goes up by 4.

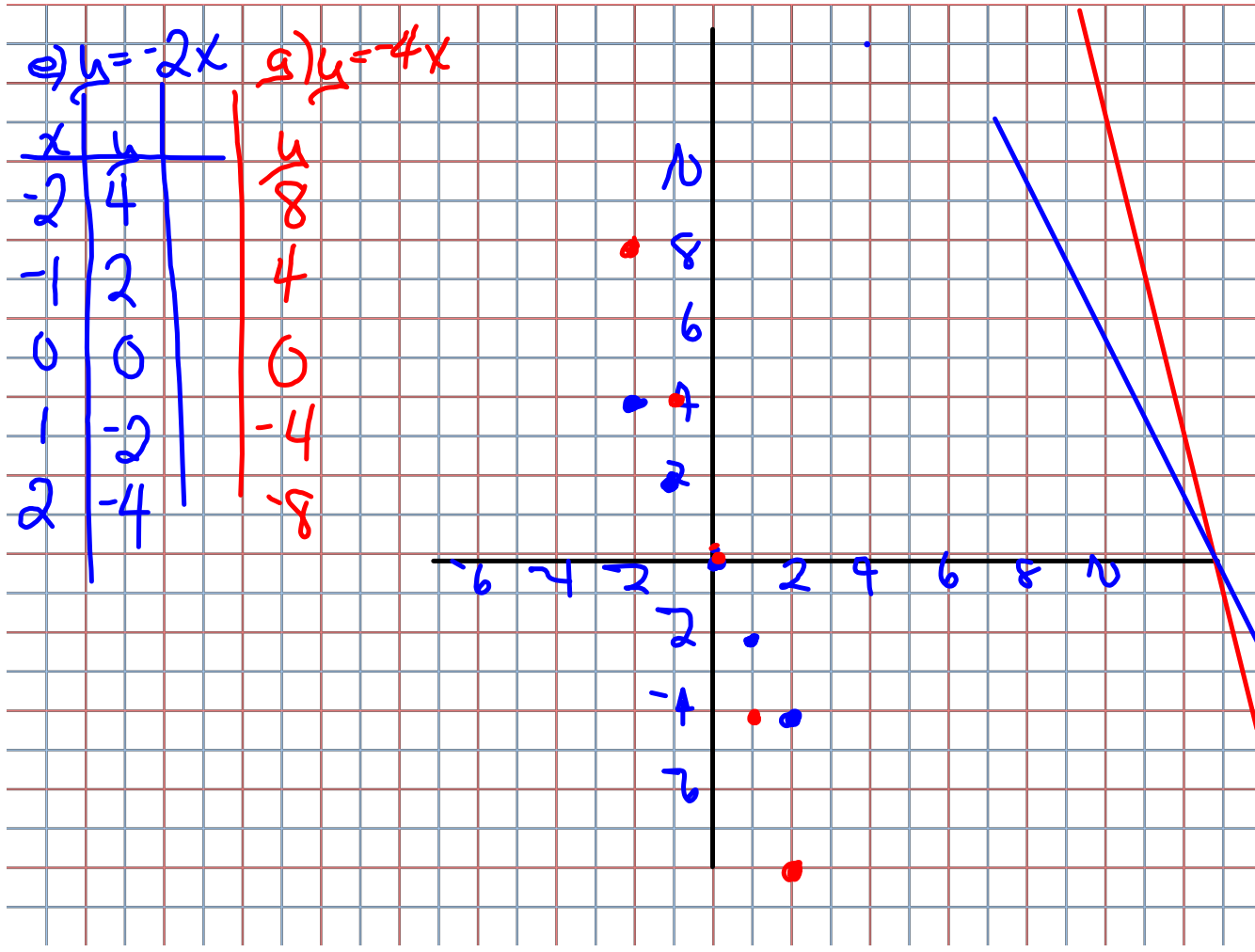
b) $y = -3x + 9$

Input	Output
x	y
0	9
1	6
2	3
3	0

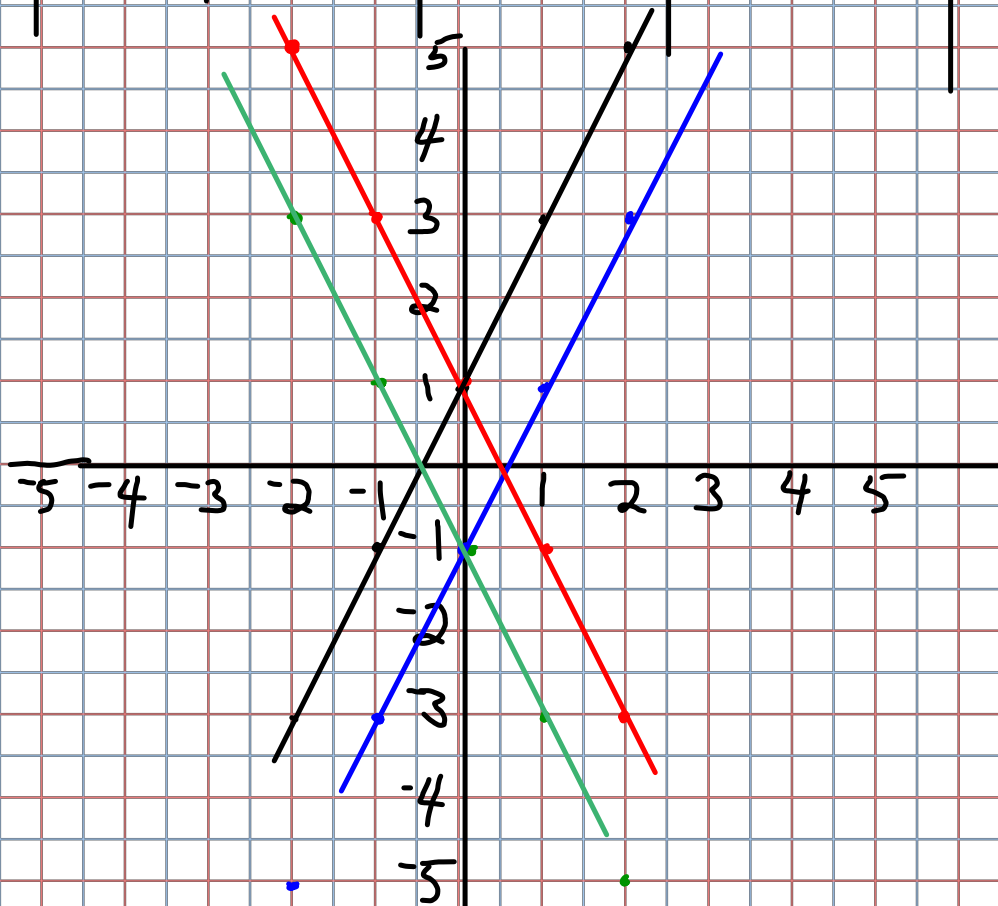
x goes up by 1
 y goes down by 3
 (or up -3)

5a) $y = 2x$		b) $y = 4x$	
x	y	x	y
-2	-4	-8	-32
-1	-2	-4	-16
0	0	0	0
1	2	4	16
2	4	8	32





6	x	a) $2x+1$	b) $2x-1$	c) $-2x+1$	d) $-2x-1$
	-2	-3	-5	5	3
	-1	-1	-3	3	1
	0	1	-1	1	-1
	1	3	1	-1	-3
	2	5	3	-3	-5



$$7 \quad y = 8x + 3$$

$$(2, \quad)$$

$$\begin{aligned} y &= 8x + 3 \\ &= 16 + 3 \\ &= 19 \end{aligned}$$

$$(5, \quad)$$

$$\begin{aligned} y &= 8x + 3 \\ &= 40 + 3 \\ &= 43 \end{aligned}$$

$$8. \quad y = -6x - 5$$

$$(-3, \quad)$$

$$\begin{aligned} y &= -6x - 5 \\ &= 18 - 5 \\ &= 13 \end{aligned}$$

$$(2, \quad)$$

$$\begin{aligned} y &= -6x - 5 \\ &= -6x - 5 \\ &= -12 - 5 \\ &= -17 \end{aligned}$$

$$(\quad, 27)$$

$$(3, 27)$$

from the graph

up
each
time

Input	Output
x	$8x + 3$
0	3
1	11
2	19
3	27
4	35
5	43

add 8
each
time

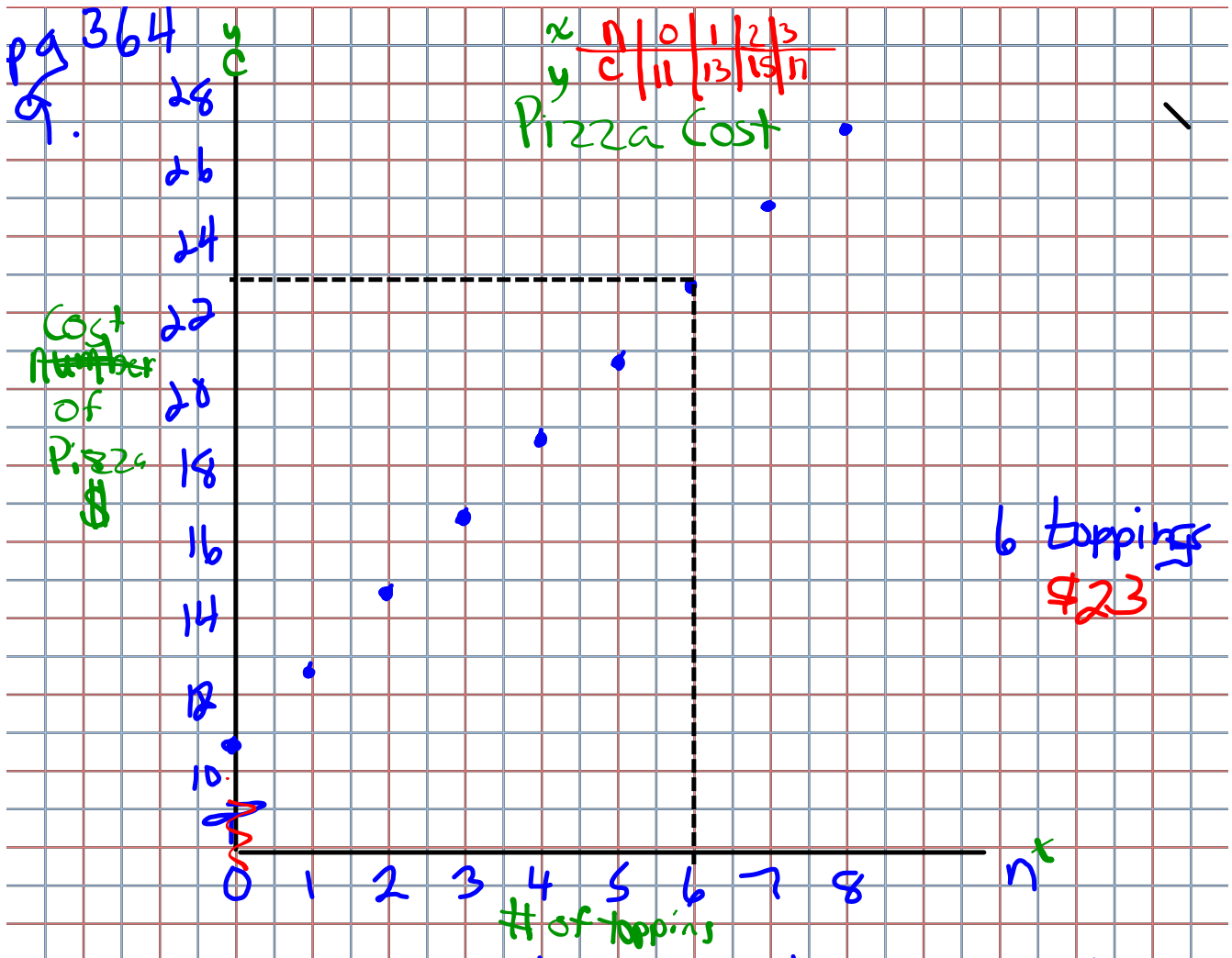
$$(\quad, 7)$$

$x = 2$ (using graph)

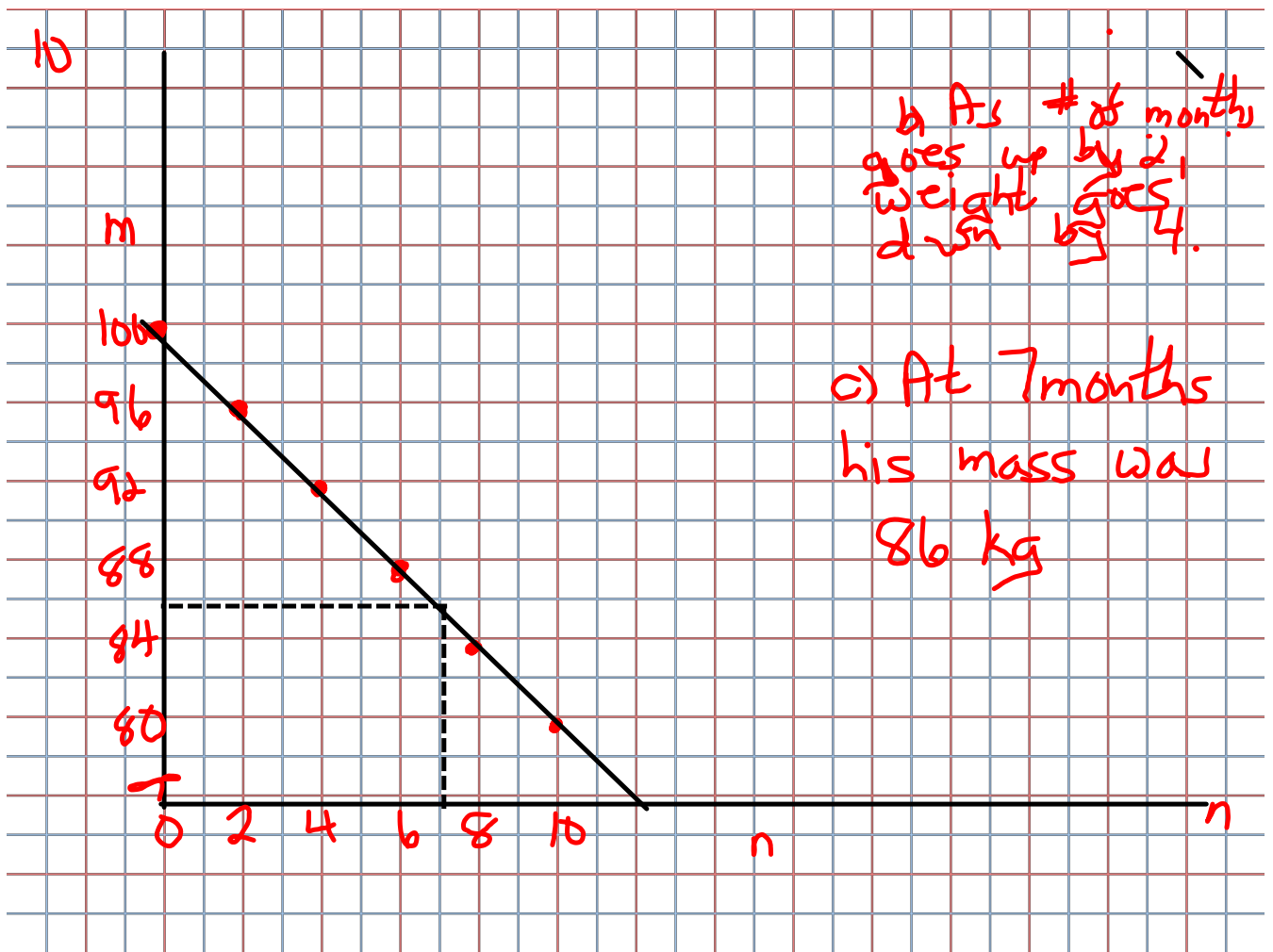
$$(\quad, -23)$$

(3, -23) using graph

could have
used a chart



b) as h goes up by 1, cost goes up by 2

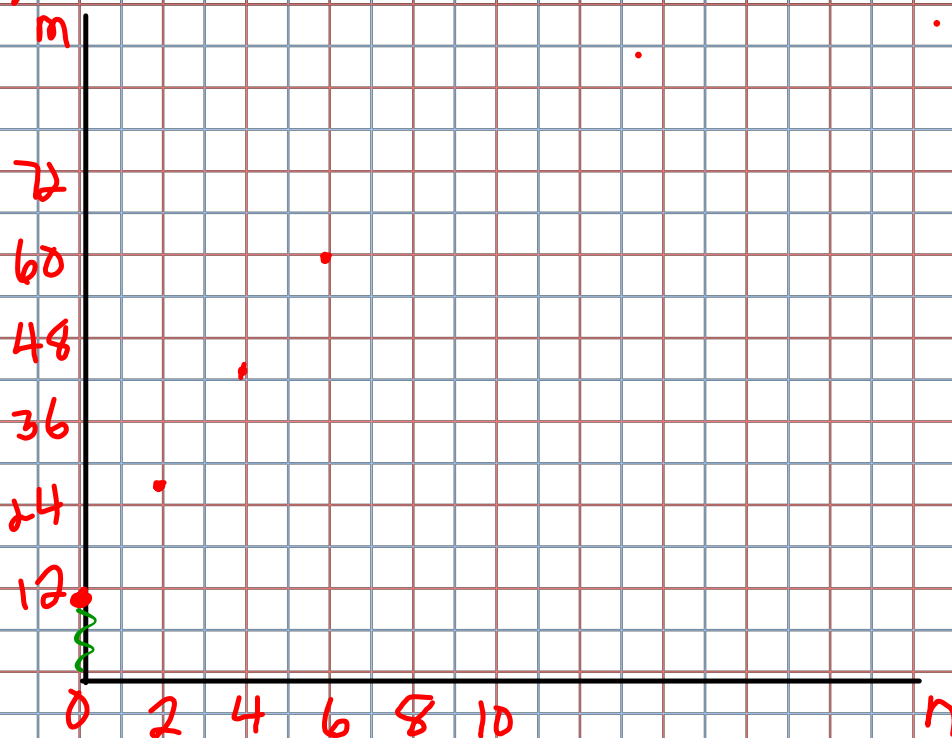


b As # of months goes up by 2, weight goes down by 4.

c) At 7 months his mass was 86 kg

$$11 \quad m = 8n + 12$$

n	m
0	12
2	28
4	44
6	60



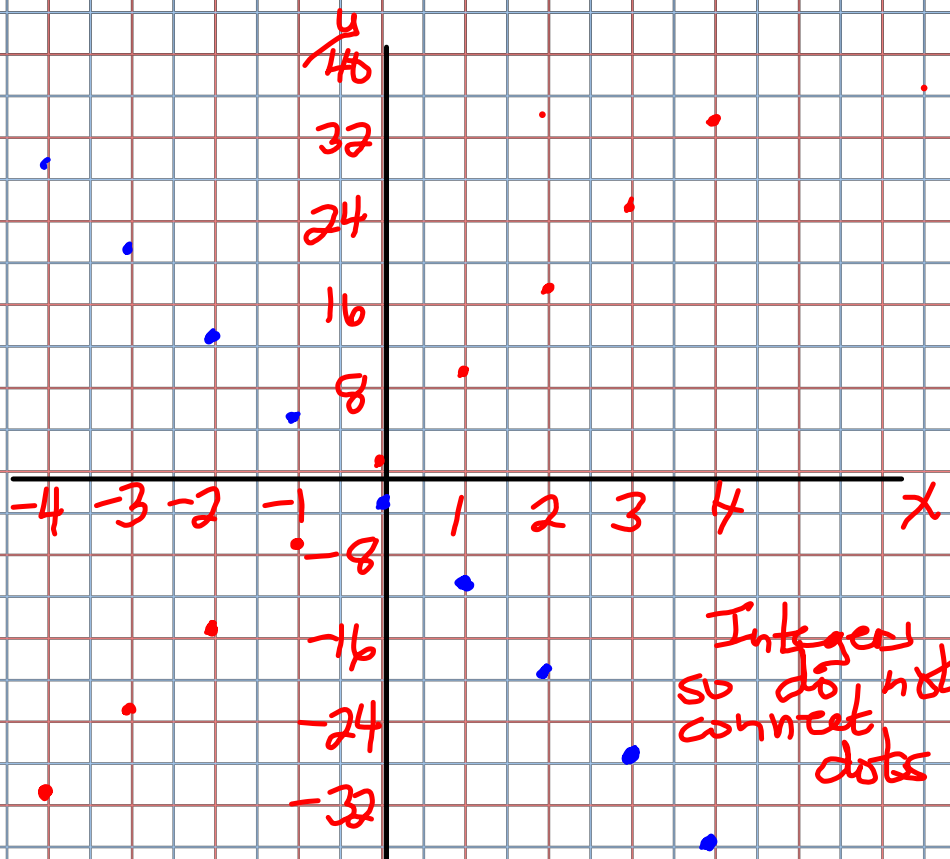
b) As # of people go up by 1

of marshmallows go up by 8

d) Yes, it linear, the dots would form a straight line

12 a) $y = 8x + 2$

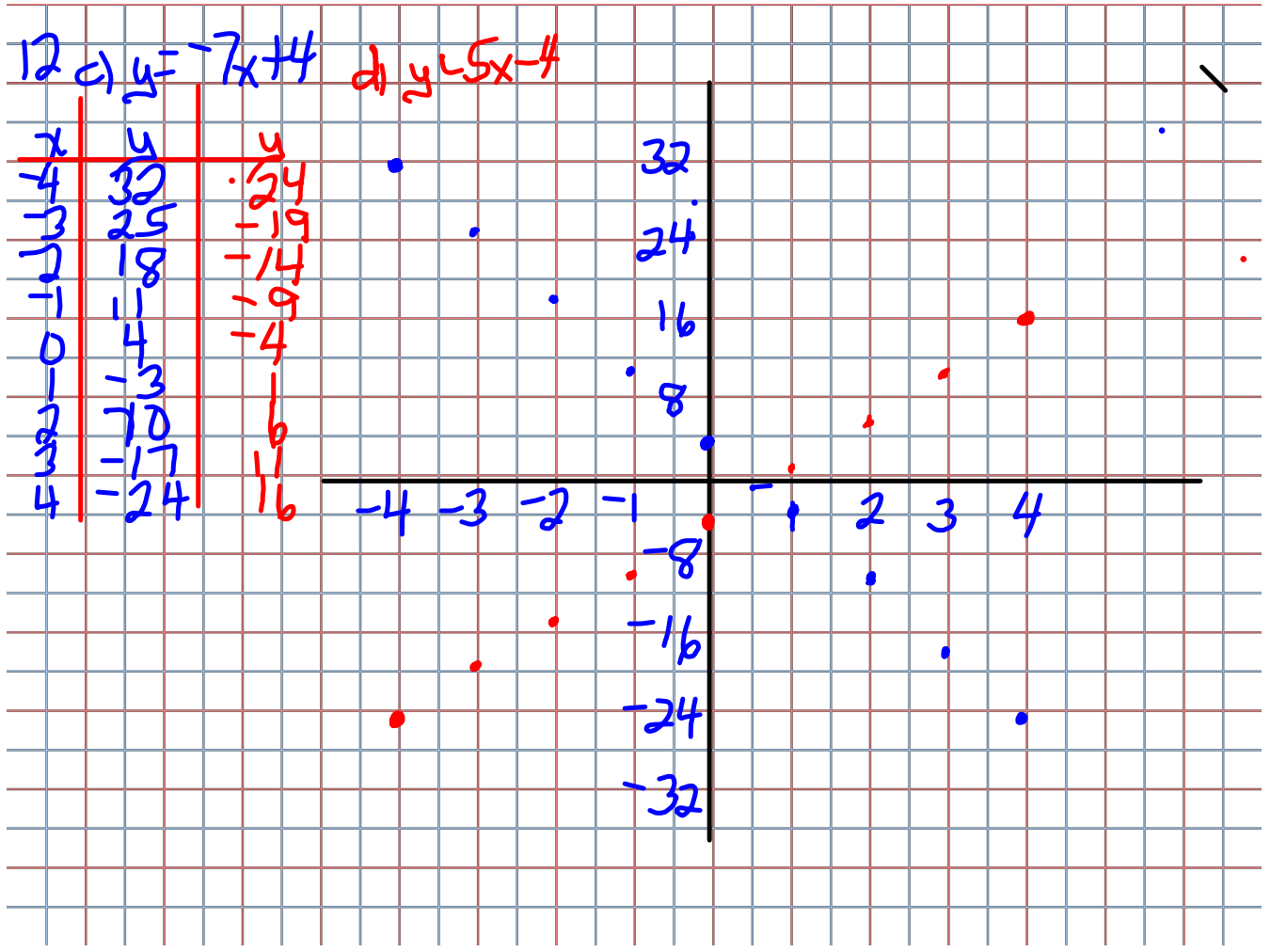
x	y
4	34
3	26
2	18
1	10
0	2
-1	-6
-2	-14
-3	-22
-4	-30

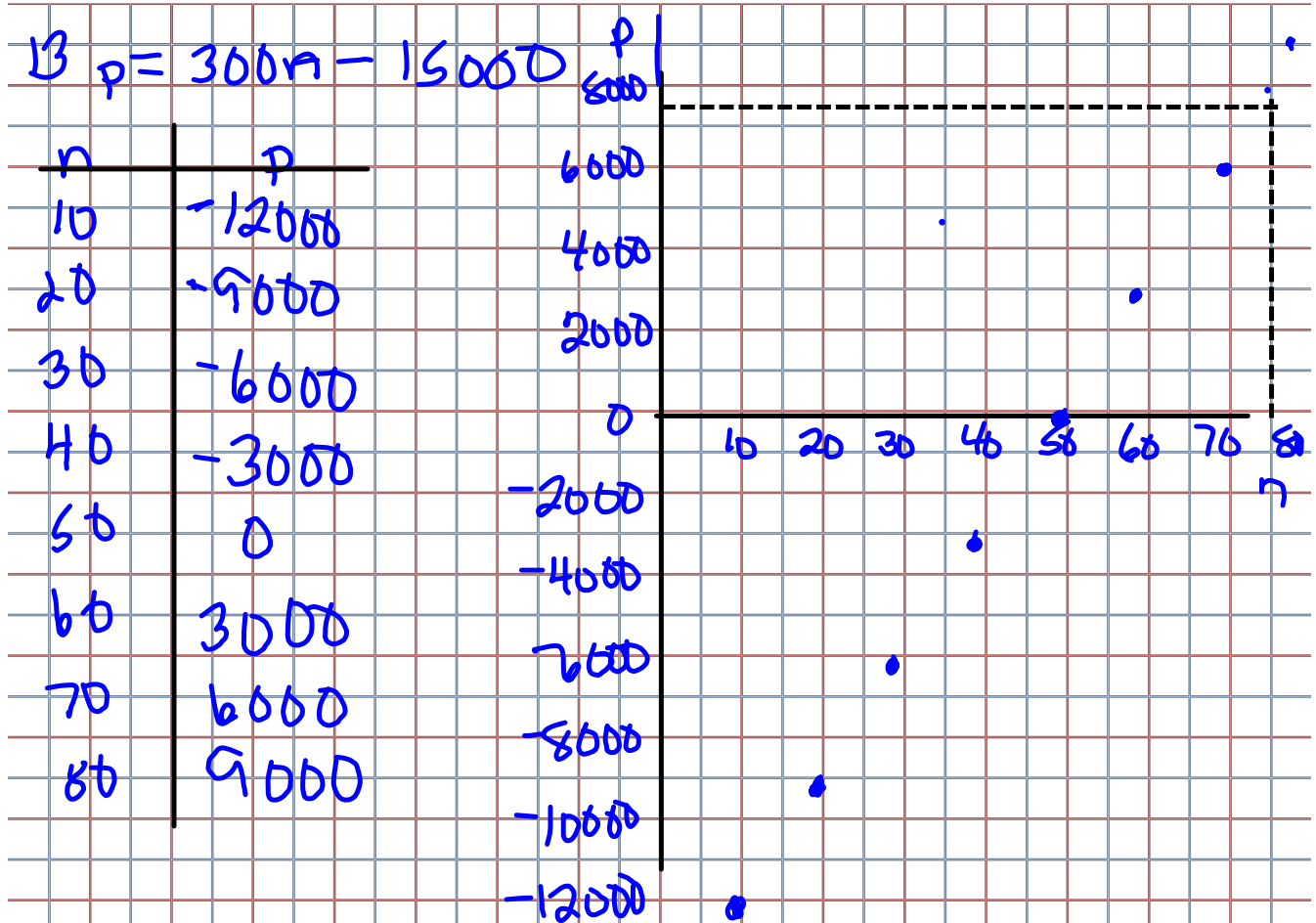


b) $y = -8x - 2$

x	y
4	-34
3	-26
2	-18
1	-10
0	-2
-1	6
-2	14
-3	22
-4	30

Integers
so do not
connect
dots





- b) - values for p represent money loss
- c) As # of tickets goes up by 10,
the profit goes up by 3000.

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18) $y = -7x + 4$

a) $(-1, -)$

$$\begin{aligned} y &= -7(x) + 4 \\ &= -7(-1) + 4 \\ &= 14 + 4 \\ &= 18 \end{aligned}$$

b) $(-, -1)$

$$\begin{aligned} -1 &= -7(x) + 4 \\ -1 - 4 &= -7x + 4 - 4 \\ -2 &= -7x \\ \frac{-2}{-7} &= \frac{-7x}{-7} \\ \frac{2}{7} &= x \end{aligned}$$

c) $(8, -)$

$$\begin{aligned} y &= -7x + 4 \\ &= -7(8) + 4 \\ &= -56 + 4 \\ &= -52 \end{aligned}$$

d) $(-, 4)$

$$\begin{aligned} y &= -7x + 4 \\ 4 &= -7x + 4 \\ 4 - 4 &= -7x + 4 - 4 \\ 0 &= -7x \\ \frac{0}{-7} &= \frac{-7x}{-7} \\ 0 &= x \end{aligned}$$

19) $p = 200 + 40n$

n	p	n=0	n=1	n=2
0	200	$p = 200 + 40(0)$	$p = 200 + 40(1)$	$p = 200 + 40(2)$
1	240	$= 200 + 0$	$= 200 + 40$	$= 200 + 80$
2	280	$= 200$	$= 240$	$= 280$
3	320			
4	360			

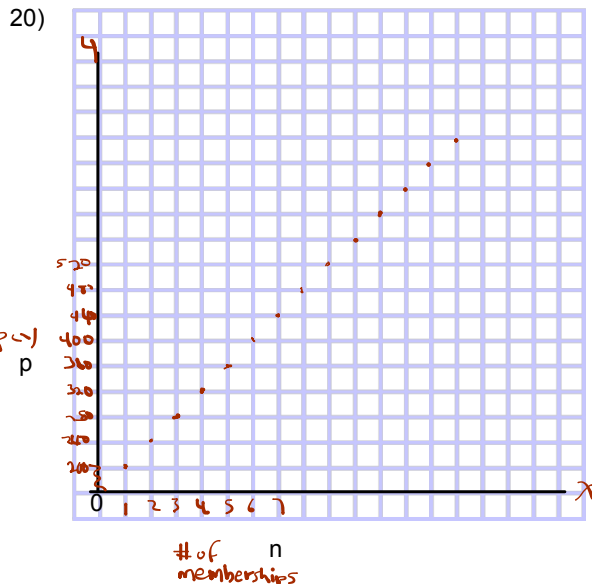
b) $n = 9$

$$\begin{aligned} p &= 200 + 40(n) \\ &= 200 + 40(9) \\ &= 200 + 360 \\ &= 560 \end{aligned}$$

Francis' pay for the week when he sold 9 memberships is \$560.

$$\begin{aligned} p &= 200 + 40(n) \\ 480 &= 200 + 40n \\ 480 - 200 &= 200 - 200 + 40n \\ 280 &= 40n \\ \frac{280}{40} &= \frac{40n}{40} \\ 7 &= n \end{aligned}$$

Graph $p = 200 + 40n$



b) When n increases by 1, p increases by 40

Class/Homework

Practice 6 Making Tables

1a, 2ab, #4ab, 5
↓
good

↑
create table
use pattern

Practice 7 Graphing Linear Equations

1a) make table look at relation
2d)
4 c) But use #4 from previous page

Test Tomorrow on Section 6.6 & 6.7

2 MC

1 Short Response (Word problem with equation given)

Part a to f (Requires to graph)

Attachments

Extra Practice 6 creating tables.pdf

Extra Practice 7 graphing linear equations.pdf