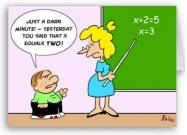


Warm Up Grade 8
Oct. 19, 2022

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.

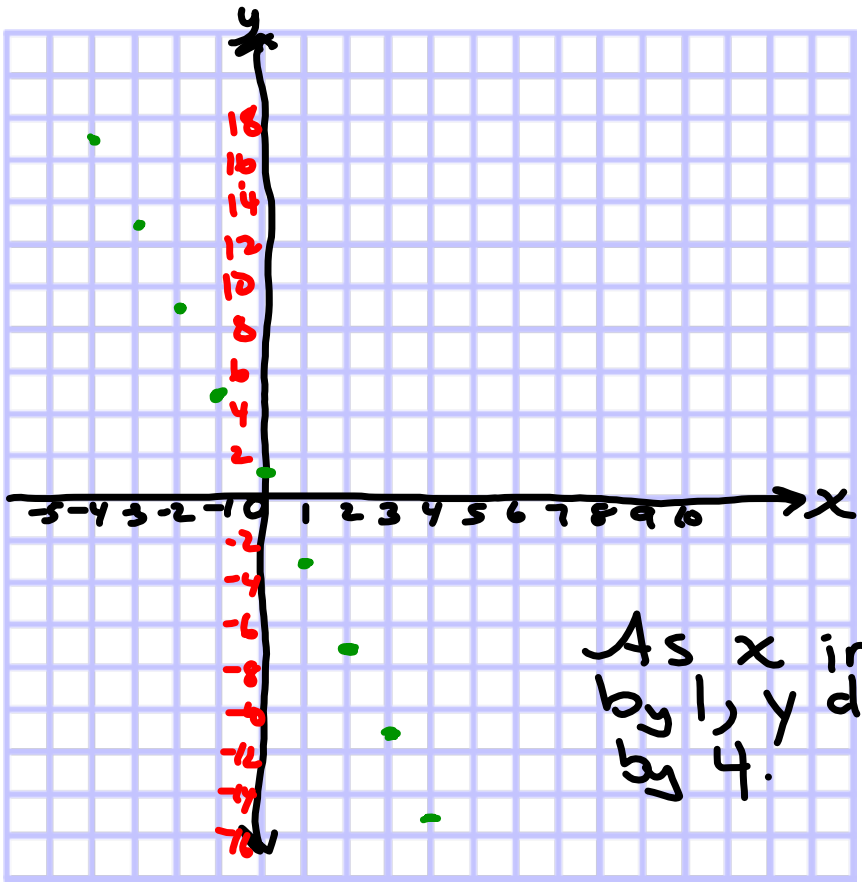
x	y
-4	17
-3	13
-2	9
-1	5
0	1
1	-3
2	-7
3	-11
4	-15

2 down 4

$x = -4$: $y = -4x + 1$, $y = -4(-4) + 1$, $16 + 1$, 17

$x = -3$: $y = -4x + 1$, $y = -4(-3) + 1$, $12 + 1$, 13

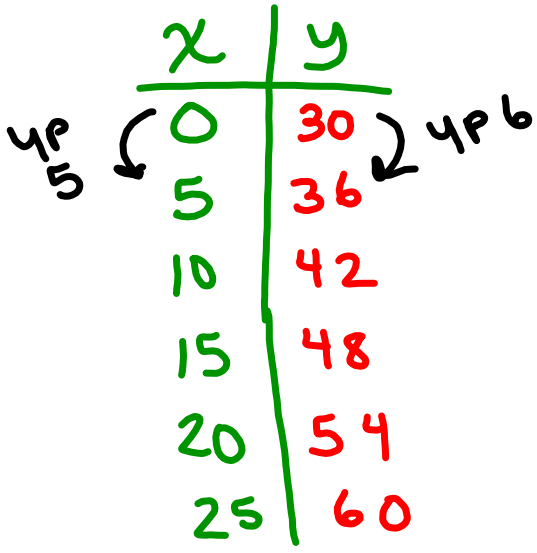
$x = -2$: $y = -4x + 1$, $-4(-2) + 1$, $8 + 1$, 9



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

up 1 down 4

As x increases by 1, y decreases by 4.



Relation

As x increases by 5, y increases by 6.

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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 band q would be on opposite sides, and the graph would be the same

4a) $y = 4x - 1$

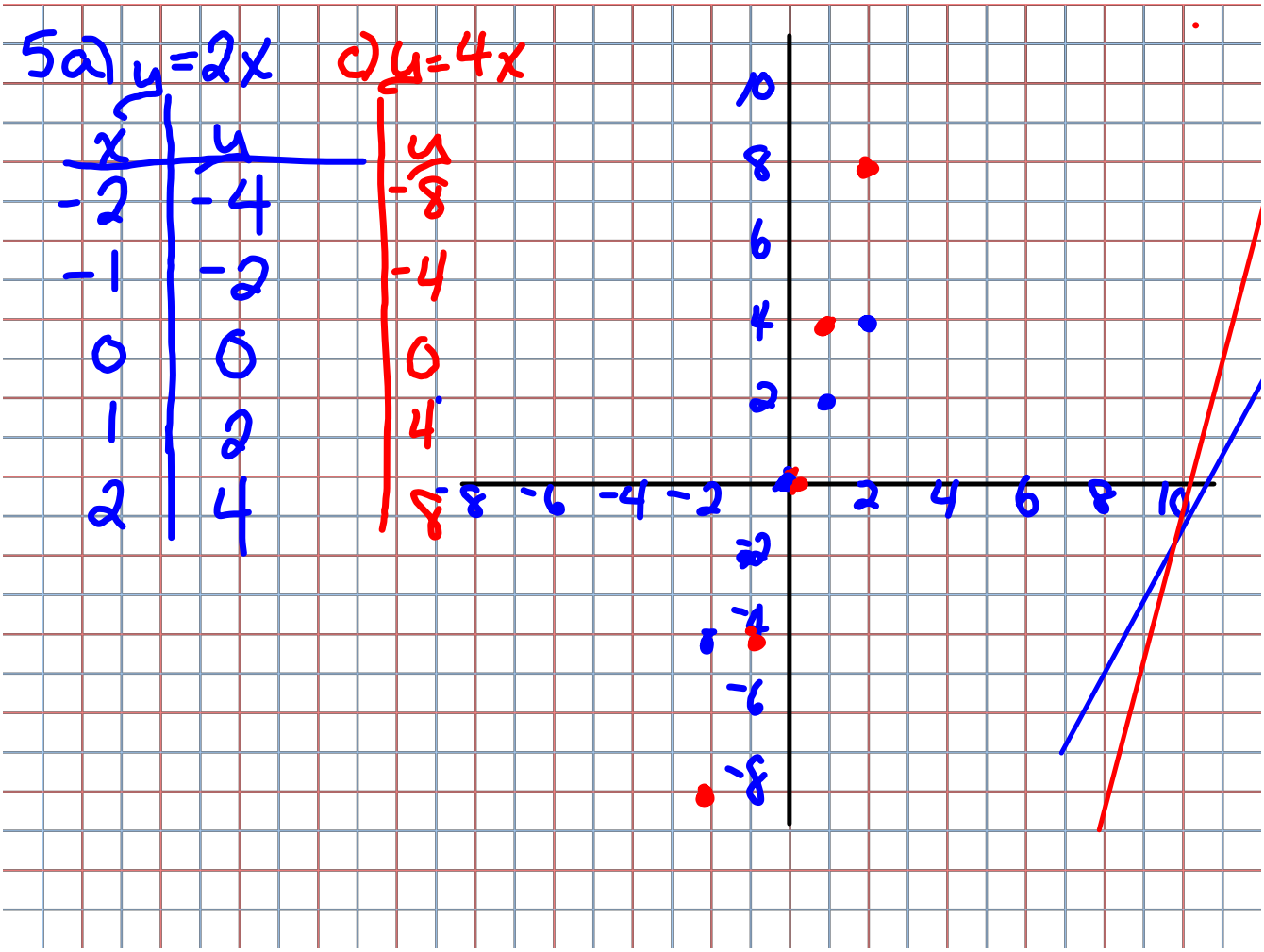
Input x	Output y
0	-1
1	3
2	7
3	11
4	15

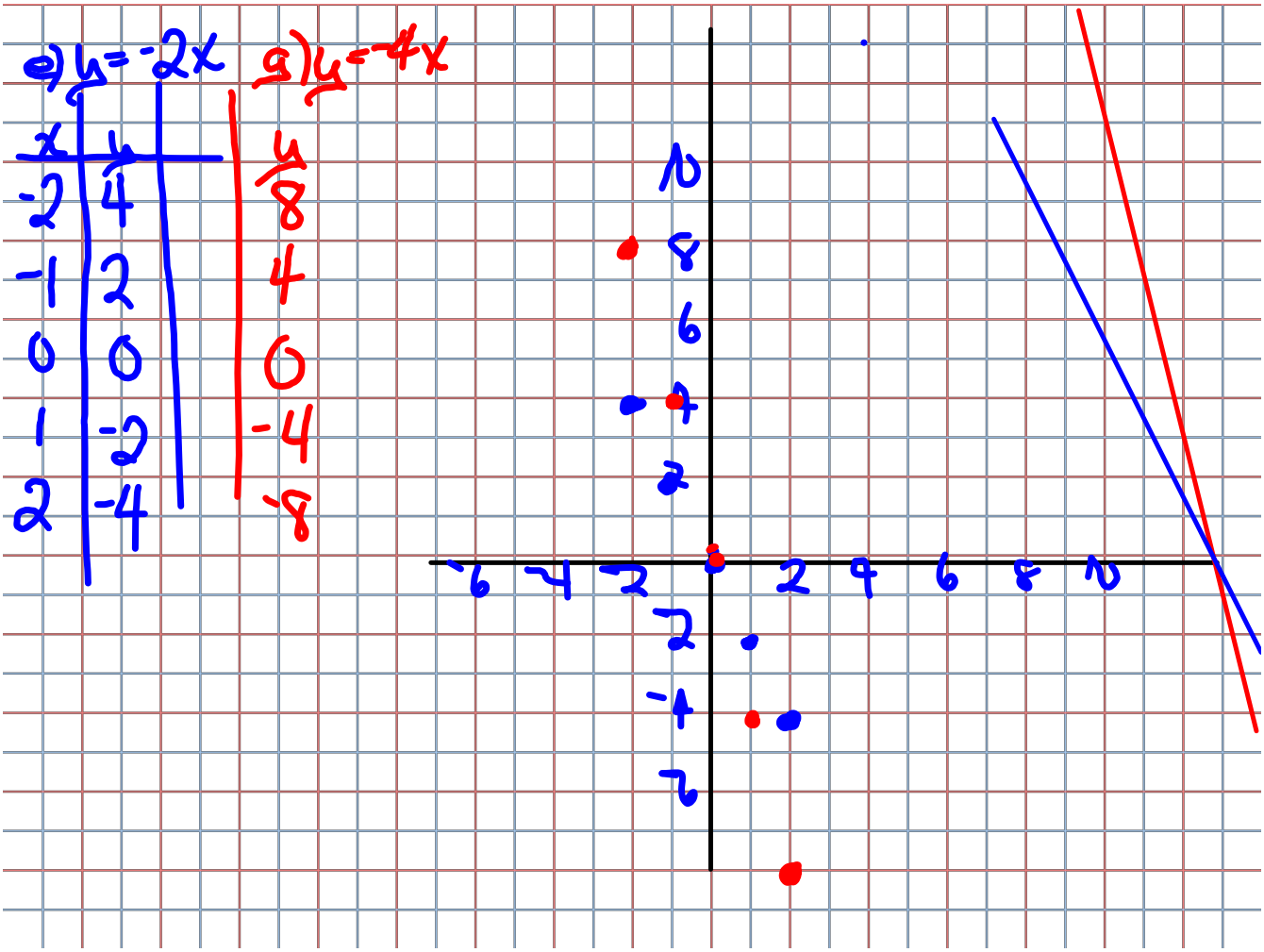
x goes up by 1,
y goes up by 4.

b) $y = -3x + 9$

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

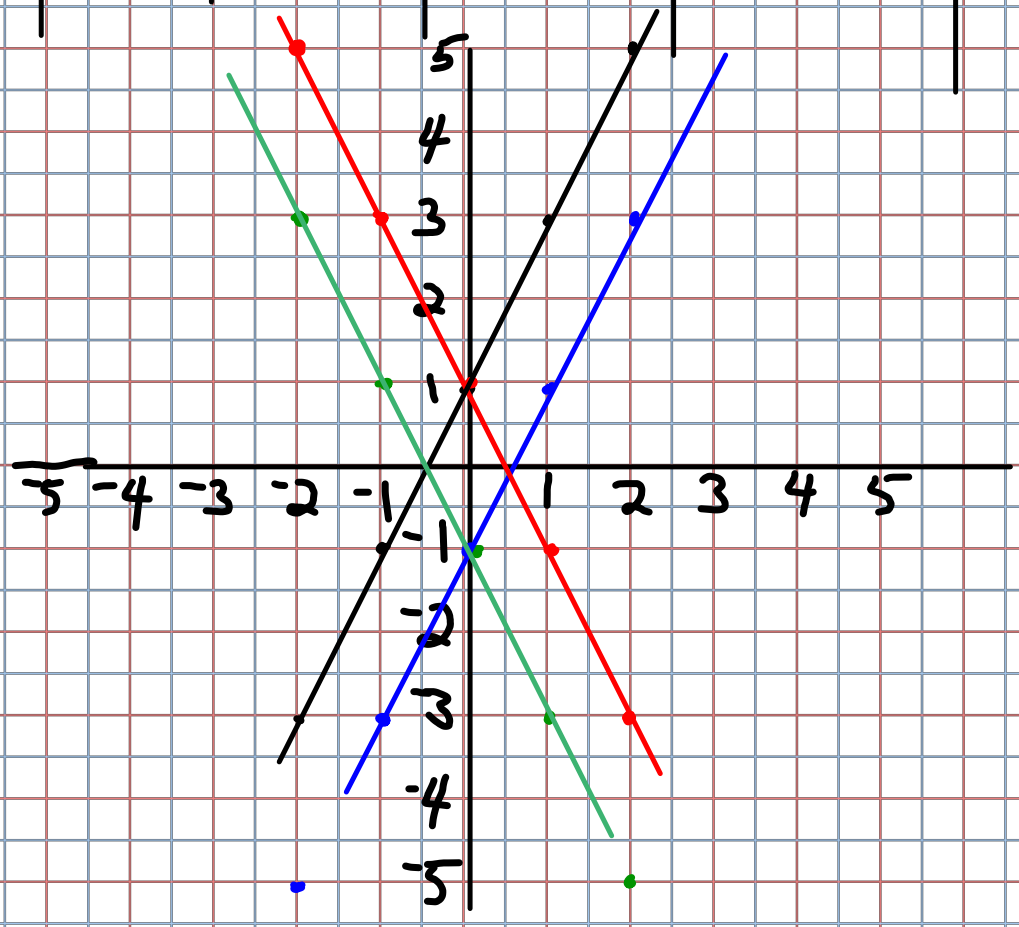
x goes up by 1
y goes down by 3
(or up -3)


5a) y=2x
x | y
-2 | -4
-1 | -2
0 | 0
1 | 2
2 | 4
c) y=4x
y
-8
-4
0
4
8


e) y = -2x
x | y
-2 | 4
-1 | 2
0 | 0
1 | -2
2 | -4
g) y = -4x
y
8
4
0
-4
-8

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 $y = 8x + 3$

$(2, \_)$

$y = 8 \times 2 + 3$
$= 16 + 3$
$= 19$

$(\_, 27)$

$(3, 27)$
from the graph

$(5, \_)$

$y = 8 \times 5 + 3$
$= 40 + 3$
$= 43$

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

up 1 each time

add 8 each time

8. $y = -6x - 5$

$(-3, \_)$

$y = -6 \times -3 - 5$
$= 18 - 5$
$= 13$

$(\_, 7)$

$x = 2$ (using graph)

$(2, \_)$

$y = -6x - 5$
$= -6 \times 2 - 5$
$= -12 - 5$
$= -17$

$(\_, -23)$

$(3, -23)$ using graph

could have used a chart

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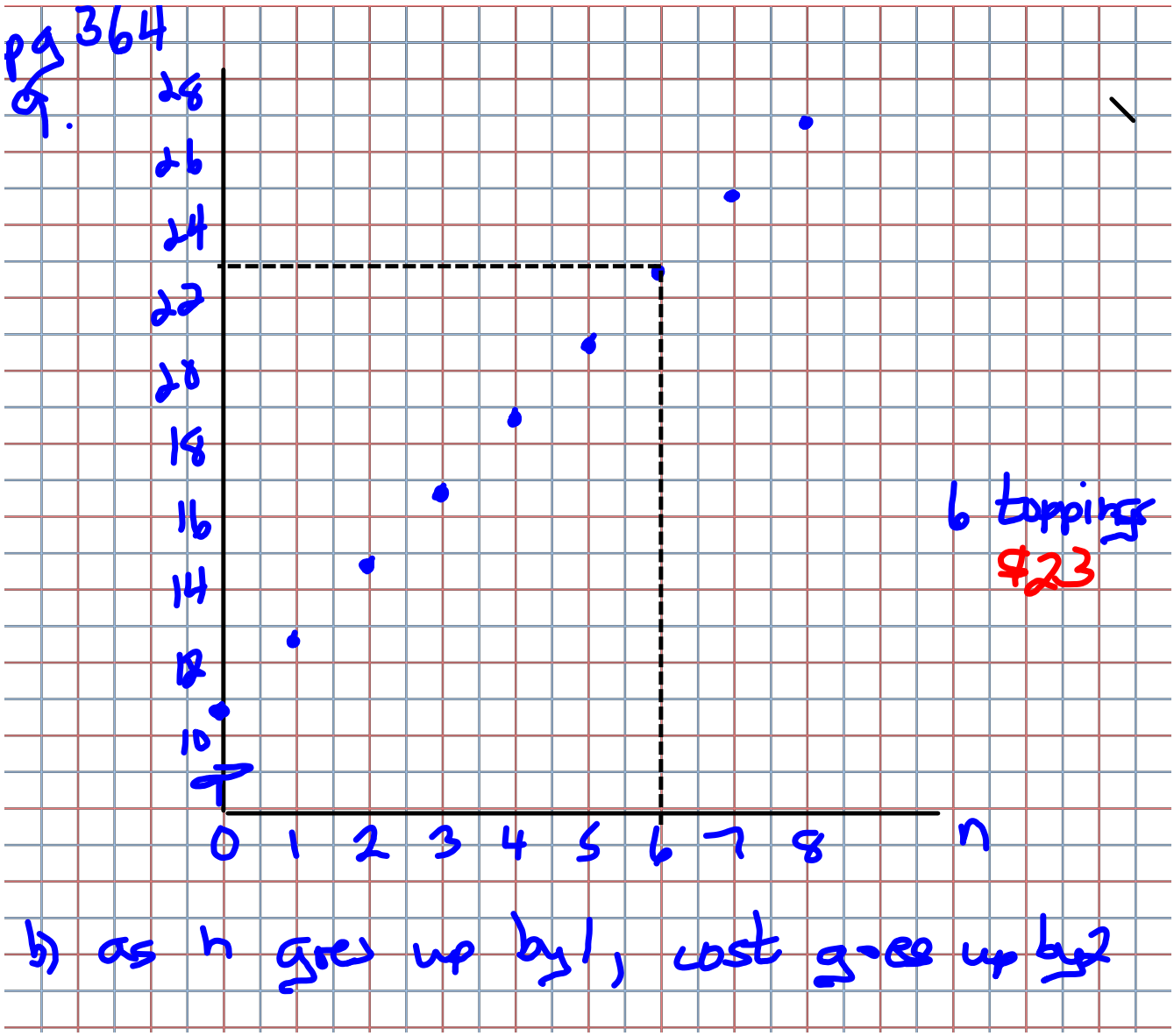
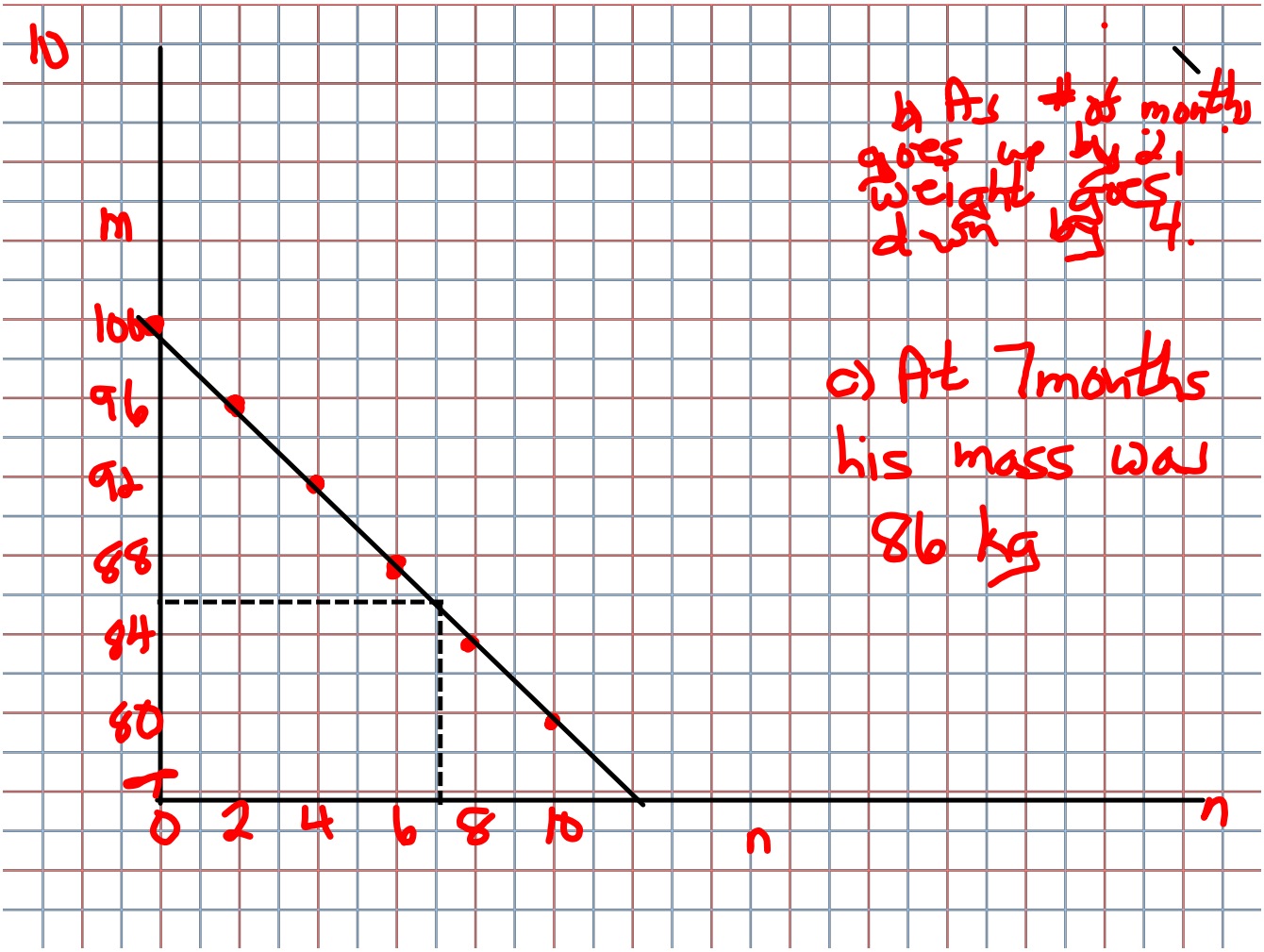
q.

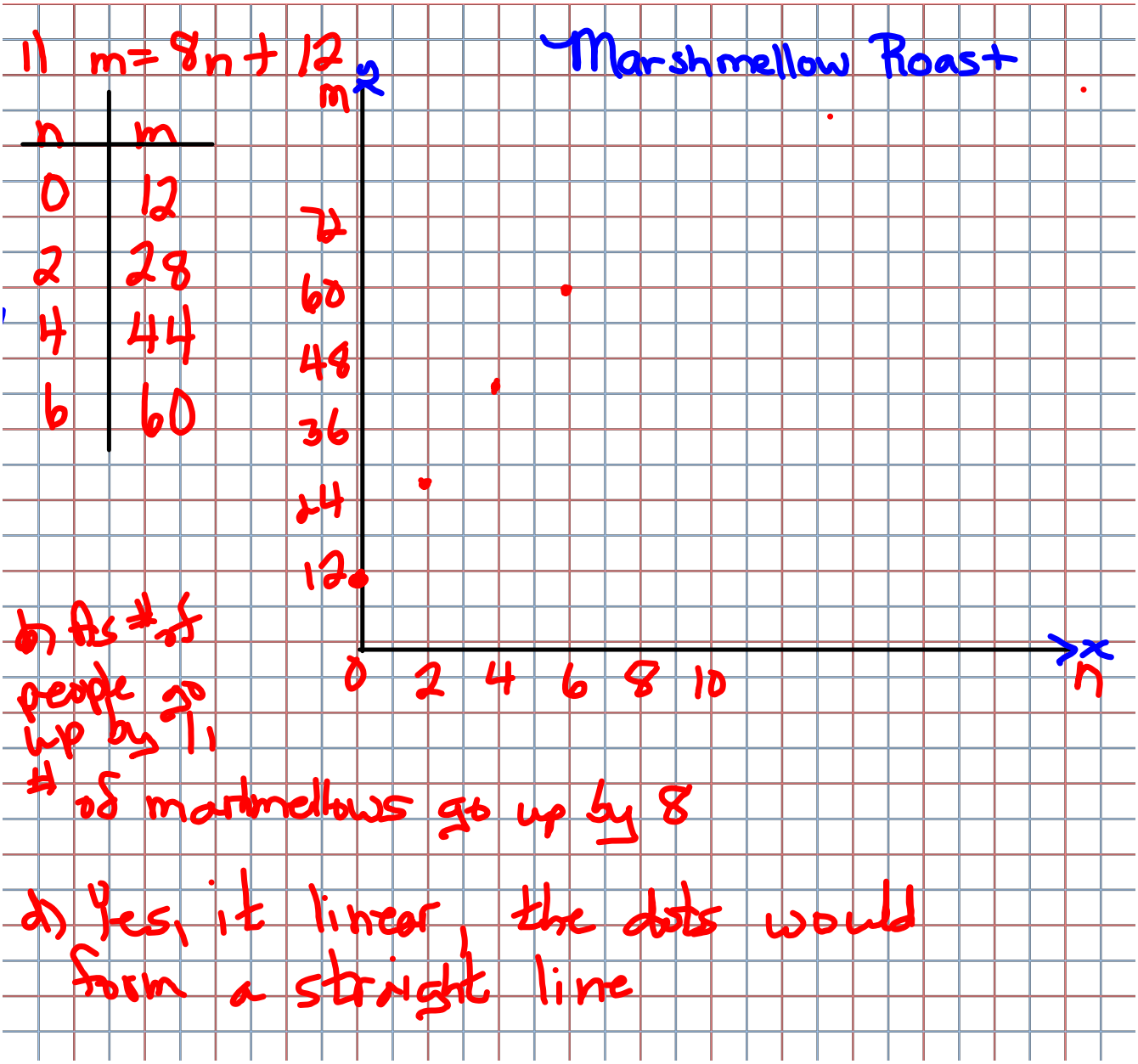


b) as n goes up by 1, cost goes up by 2


m
100
96
92
88
84
80
0 2 4 6 8 10
n
b) As # of months goes up by 2, weight goes down by 4.
c) At 7 months his mass was 86 kg

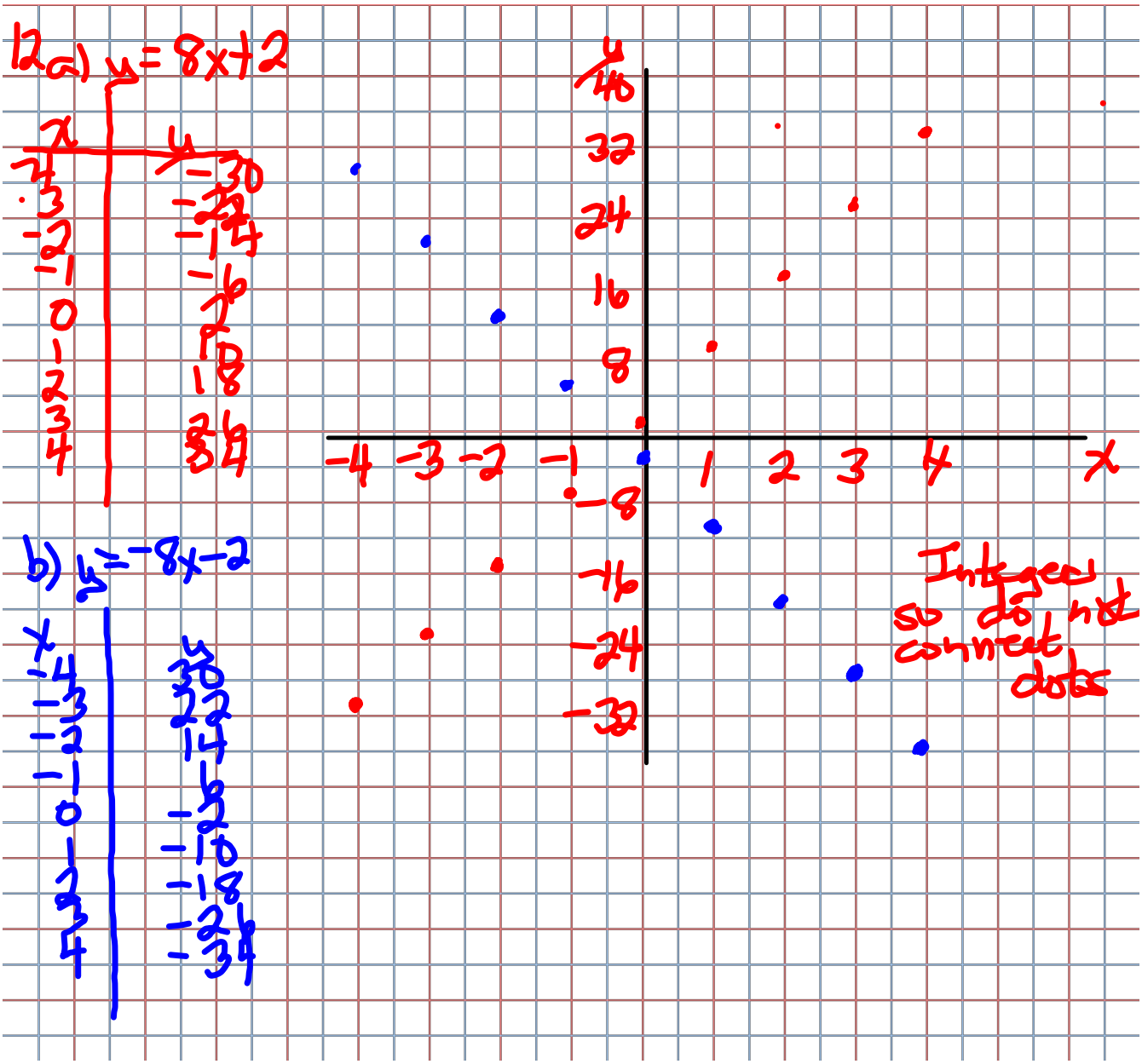
11 $m = 8n + 12$

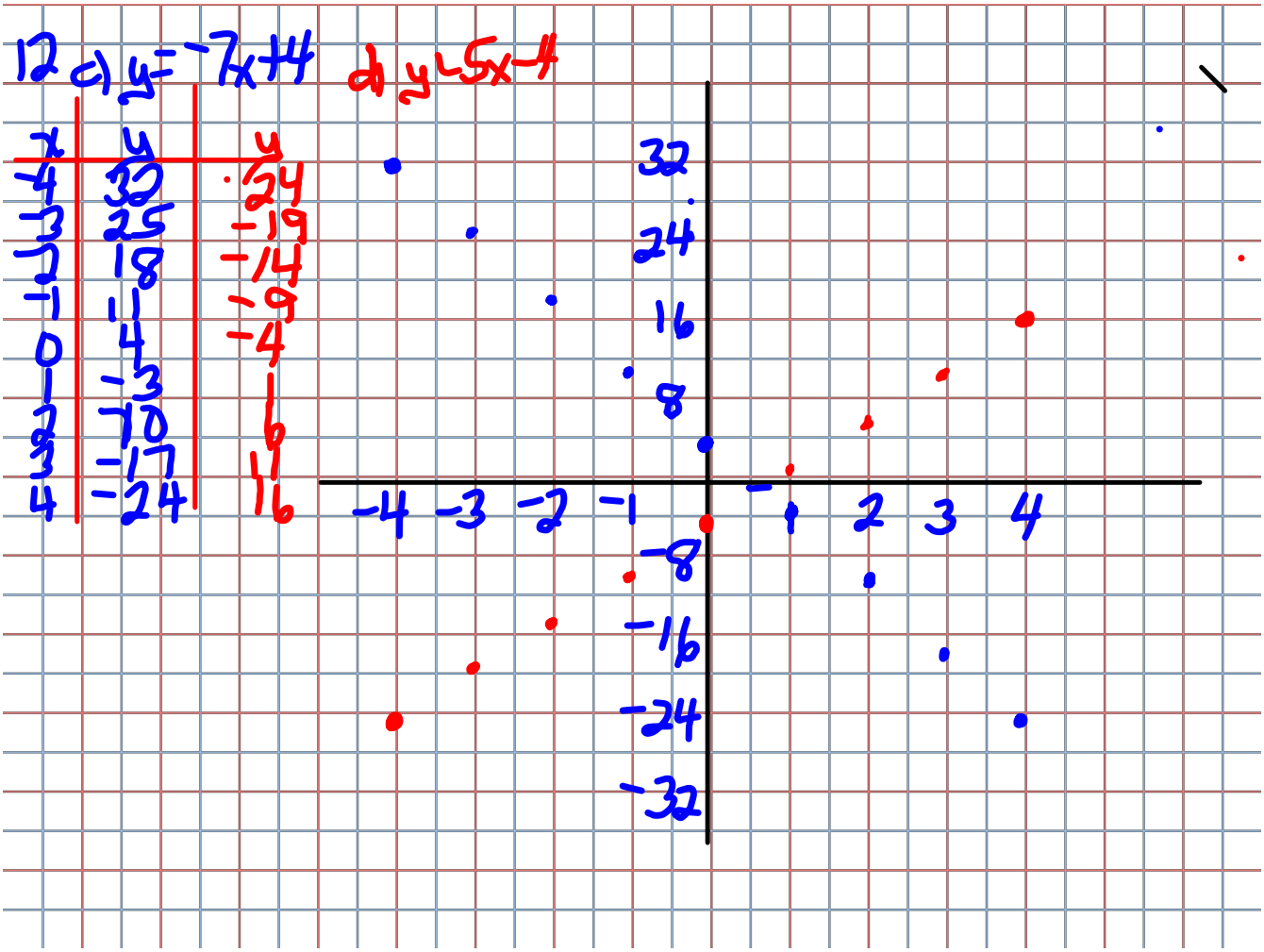
n	m
0	12
2	28
4	44
6	60



b) As # of people go up by 1, # of marshmellows go up by 8

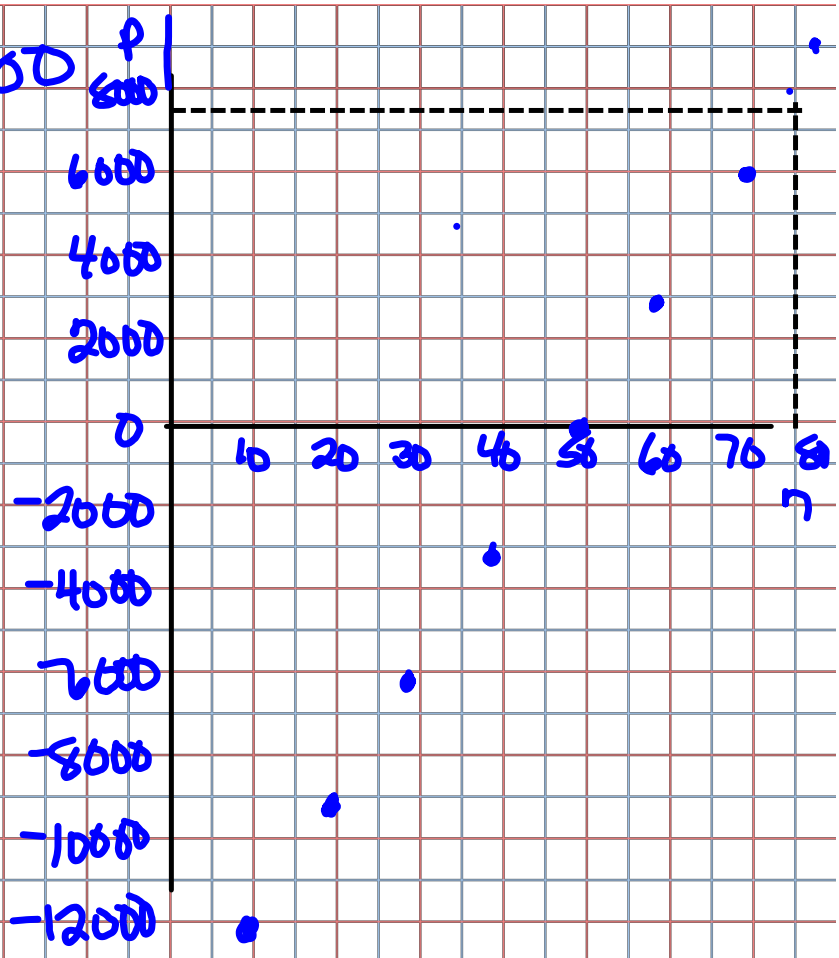
d) Yes, it linear, the dots would form a straight line


12a) y = 8x + 2
x
y
-4
-3
-2
-1
0
1
2
3
4
-30
-22
-14
-6
2
10
18
26
34
b) y = -8x - 2
x
y
-4
-3
-2
-1
0
1
2
3
4
30
22
14
6
-2
-10
-18
-26
-34
y
40
32
24
16
8
-8
-16
-24
-32
-4 -3 -2 -1 1 2 3 4 x
Integers so do not connect dots


12 a) y = -7x + 4
x | y
-4 | 32
-3 | 25
-2 | 18
-1 | 11
0 | 4
1 | -3
2 | -10
3 | -17
4 | -24
y
24
-19
-14
-9
-4
1
6
11
16
d) y = 5x - 4
32
24
16
8
-4 -3 -2 -1 1 2 3 4
-8
-16
-24
-32

13 $p = 300n - 15000$

n	p
10	-12000
20	-9000
30	-6000
40	-3000
50	0
60	3000
70	6000
80	9000



b) - values for p represent money lost

c) As # of tickets goes up by 10, the profit goes up by 3000.

Class/Homework

Finish Page 373 #18, #19 #20
Then

Practice 6 Making Tables

Practice 7 Graphing Linear Equations

Test on Section 6.6 & 6.7 (Day after tomorrow)

2 MC
1 Short Response (Word problem with equation given)
Part a to f (Requires to graph)

Page 373

18) $y = -7x + 4$

a) $(-2, \_\_)$

$y = -7(x) + 4$

$= -7(-2) + 4$

$= 14 + 4$

$= 18$

b) $(-1, -17)$

$-17 = -7(x) + 4$

$-17 - 4 = -7x + 4 - 4$

$-21 = -7x$

$\frac{-21}{-7} = \frac{-7x}{-7}$

$+3 = x$

c) $(8, \_\_)$

$y = -7x + 4$

$= -7(8) + 4$

$= -56 + 4$

$= -52$

d) $(-, 4)$

$y = -7x + 4$

$4 = -7x + 4$

$4 - 4 = -7x + 4 - 4$

$\frac{0}{-7} = \frac{-7x}{-7}$

$0 = x$

19) $p = 200 + 40\,n$

n	p
0	200
1	240
2	280
3	320
4	360

+40, +40

n=0

$p = 200 + 40\,(n)$

$= 200 + 40\,(0)$

$= 200 + 0$

$= 200$

n=1

$p = 200 + 40\,(n)$

$= 200 + 40\,(1)$

$= 200 + 40$

$= 240$

n=2

$p = 200 + 40\,(n)$

$= 200 + 40\,(2)$

$= 200 + 80$

$= 280$

b) n = 9

$p = 200 + 40\,(n)$

$= 200 + 40\,(9)$

$= 200 + 360$

$= 560$

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

$p = 200 + 40\,(n)$

$480 = 200 + 40n$

$480 - 200 = 200 - 200 + 40n$

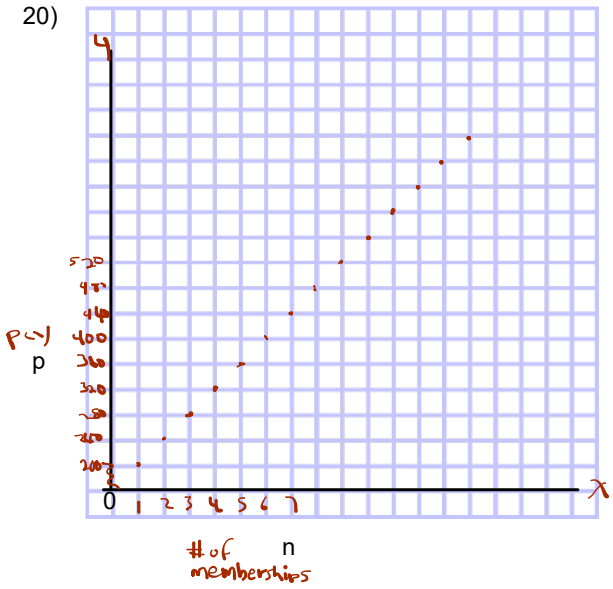
$280 = 40\,n$

$\frac{280}{40} = \frac{40\,n}{40}$

$7 = n$

Graph $p = 200 + 40n$

20)



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

Attachments

Extra Practice 6 creating tables.pdf

Extra Practice 7 graphing linear equations.pdf