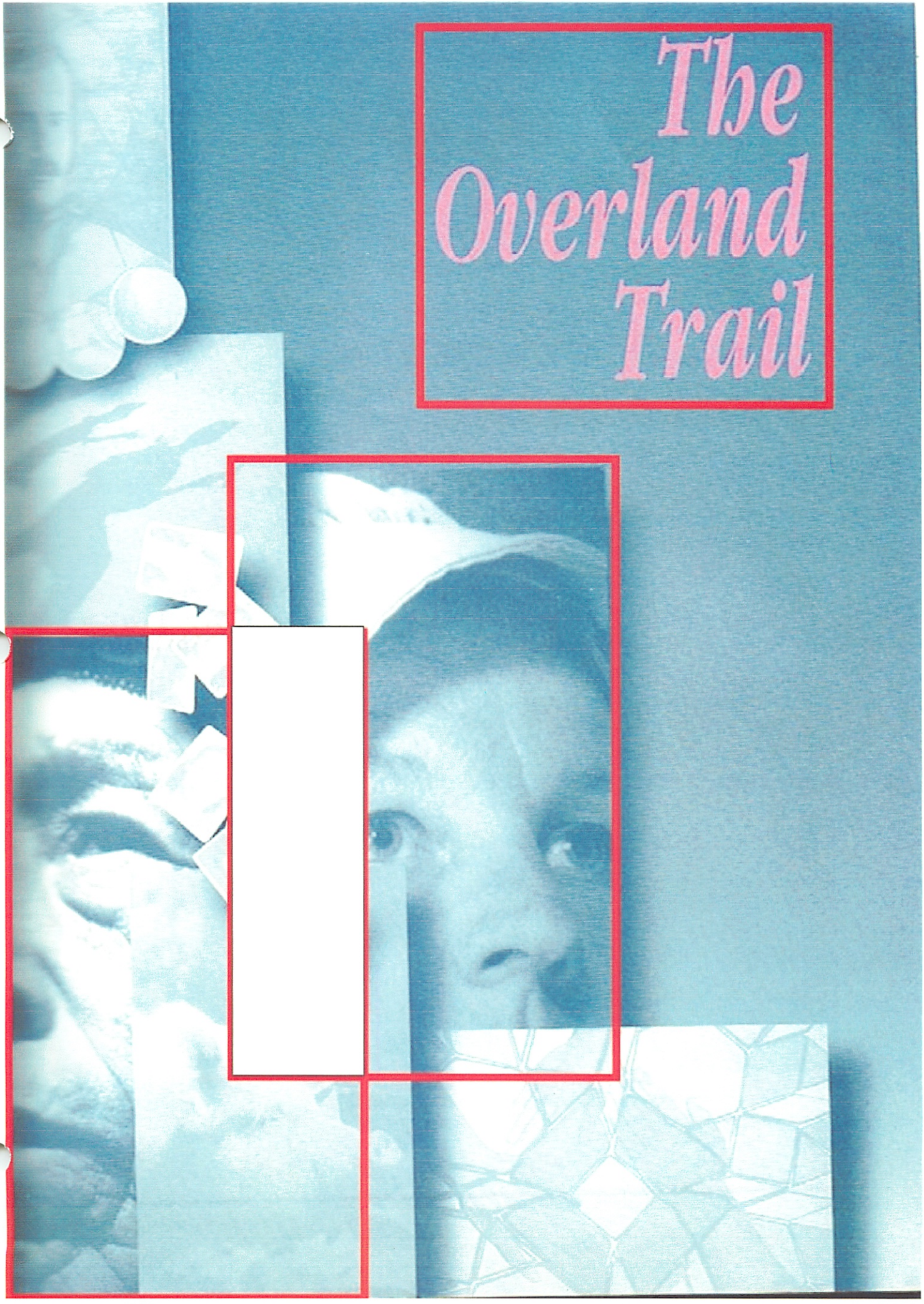
The Overland Trail



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Minimal Family

min ≤ x ≤ max

3 ≤ P ≤ 7

2 < A < 6

1 < M < 6

0 < H < 4

1 < C < 3

0 < C < 3

0 < C < 3

0 < W < 3 (Wrong)

0 < Married < 1

Min

Adult brother

Adult brother

child

Max

Outs

7 people

4 Adults

3 Children

3 Men

1 Woman

Large Fam

Clue from min fam

15 ≤ P ≤ 25 (couldn't use)

7 < A < 12

2 < M < 8 10

2 < F < 8 10

2 < H < 6 5

8 < C < 10 18

5 < C < 9 18

6 < C < 10 8

2 < Married < 2

25 People

12 Adults

6 Men

6 Woman

13 Kids

6 19

Nonfamily

$2 \leq p \leq 12$

$2 \leq A \leq 10$

$2 \leq M \leq 8$

$0 \leq W \leq 2$

$0 \leq H \leq 6; 8?$

$0 \leq C \leq 2$

$6 \leq C_y \leq 1$

$1 \leq C_o \leq 2$

$0 \leq (\text{Married}) \leq 6$

12 people

10 Adults

8 men

2 woman

2 children

Conglormate Fam

Not doing

$3 < p < 12$

Ours

12 People

3 adults

1 man

2 woman

9 Children

8 is the most because you can have 8 hired hands + 2 men, but then that doesn't make since 6 is a better choice to have more in the family

Hats (72) / Notes

Michael Plasmeier

1/14

1/18

1. Non 2 < H < 17
   Min 3 < H < 7
   Large 15 < H < 25
   Large 3 < H < 17
2. Train 23 < H < 57
3. 12 + 7 + 25 + 12 = 57

(coefficient) variable + constant

algebraic expression

Evaluate / Solve / Compute / Calculate / simplify / just do it

Shortcut

$2(x+y) - 3(x+y) - 5(x+y)$

2 of these - 3 of these - 1 of these

$-1(x+y)$

$2(x+y) - 3(x+y) - 5(x+y)$

if $y = x = -\frac{1}{2}$

$2(-1) - 3(-1) - 5(-1)$

$-2 + 3 + 5$

$-2 + 8$

6

0

$2x + 1$

a) $x = \frac{1}{2}$ $2\left(\frac{1}{2}\right) + 1$

$1 + 1$

2

b) $x = -\frac{2}{3}$ $2\left(-\frac{2}{3}\right) + 1$

Copy Mistake

$-\frac{4}{3} + 1$

$-\frac{1}{3}$

c) $x = 8$ $2(8) + 1$

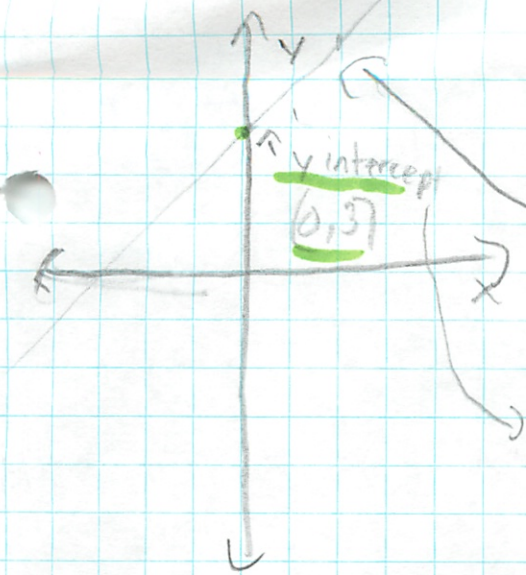
$16 + 1$

17

substitute

Slope Review

1/18



$y = mx + b$ ← slope intercept form

$y = 2x + 3$

x	y
0	3
1	5
2	7
-2	-1

Do it like notes on HW #2

Write 4 expressions to find total costs of hats for each family

kids = $5 : A

adult = $15.50 : k

Min = 7A + 3k Max 25A + 13k Non 10A + 2C

7 Variable but definitive

7(15.50) + 3(5)

Non 3A + 9C Total 27(5)

Review

$3(x+1)-4=12$

$3x+3-4=12$

$3x-1=12$

$+1 \quad +1$

$3x=13$

$\frac{3x}{3}=\frac{13}{3}$

$1x=\frac{13}{3}$

$3(x+1)-4=12$

$3(\frac{4}{3}+1)-4=12$

$3(\frac{7}{3})-4=12$

$16-4=12$

$12=12$ ✓

Shortcut

$3(x+1)-4=12$

$+4 \quad +4$

$\frac{3(x+1)}{3}=\frac{16}{3}$

$x+1=\frac{16}{3}$

$-1 \quad -1(\frac{3}{3})$

$x=\frac{13}{3} \rightarrow 4\frac{1}{3}$

Dry Trails (#3)

Michael Plasmeier 1/18

Irregularity
(outlyer)

Organ Trial has highest adv. but except for the cough data (42) is eliminated, the adverage becomes significantly less then the others. You take a risk, but its worth it.

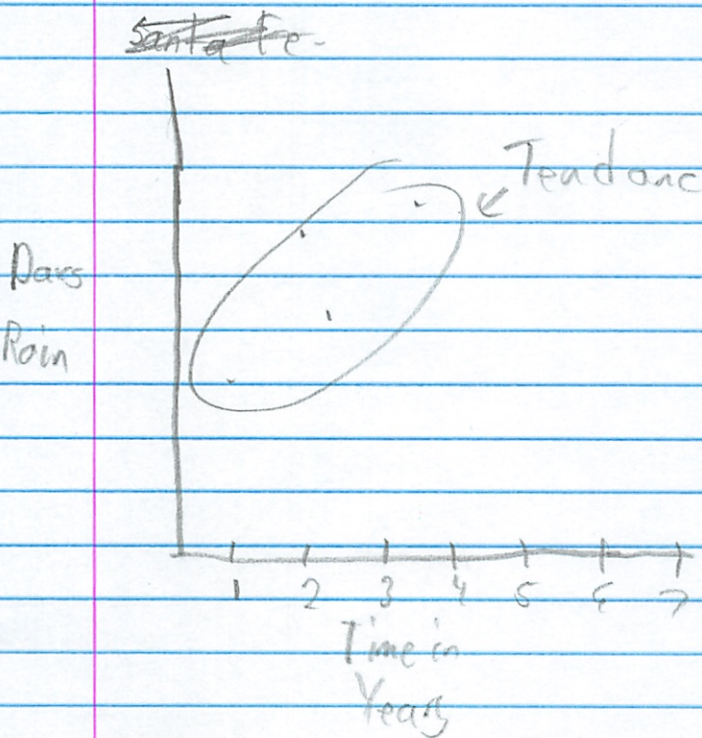
Very constant except for

Santa Fe - Can be low or high adv is 1 : 2
take a real chance

Smokey Hill - most steady Constiant

Slope - change (rise over run)
adv rate of change

~~Santa Fe~~



Shoelace #6

1/20

M = 2B + 15
W = 1B + 25
C = 3M

Let B = 48
Let S = 32
Let M = 24

Costs 2¢

2. 2x(2B + 15)
2x(2(48) + 32)
2x(96 + 32)
2x(128)
256 = M

1. 1x(1B + 25)
2(48 + 2(32))
2(48 + 64)
2(112) = W
224 = W

3. 2(3M)
2(3(24))
2(72) = C
144 = C

4. Min: 4M + 3C
4(256) + 3(144)
1024 + 432
1456 = Min

Max: 25M + 13C
25(256) + 13(144)
6400 + 1872
8

Must Divide Men + Woman

Do: 224W ÷ 1W = # of Woman

3M + 1W + 3C
3(256) + 224 + 144
768 + 224 + 144
1136 = Min

1424

3M + 2W + 2C
8(256) + 2(224) + 2(144)
2048 + 448 + 288
2784 = Max

6M + 6W + 13C
6(256) + 6(224) + 13(144)
1536 + 1344 + 1872
4752 = Max

1M + 2W + 4C
256 + 2(224) + 4(144)
256 + 448 + 1296
2000 Congo

T_congo = 2000 ¢

224W + 256M + 144C
224(1) 256(3) + 144(3)
224 + 768 + 432
1424

T: Total of
T_min
min

Laced Travelers #7

Michael Plasmeier 1/21

1. 2 men 1 W 3 C
   2(5) + 1(4) + 3(3)
   10 + 4 + 9
   23 yds per family × 25 = 575 yds per train
   = $11.50 per train × 156 trains = $1795 worth of shoe laces for the year 1852 (3750)

   $\frac{\text{Yds}}{\text{Fam}} \times \frac{\text{Fam}}{\text{Trn}} \times \frac{\text{Trn}}{\text{Yrs}} = \text{yds} \times \text{years}$

4. 2 men 1 woman 2 C
   2(5) + 1(4) + 2(3)
   10 + 4 + 6
   20 yds per family × 25 = 500 yds per train
   = $10 per train × 150 trains ($1500) worth of shoelaces for 1853

3750 (2m + w + 2c) 7,500

3750 = # of families crossing trail (Shortcut of

Kearny Ferry (H8)

Michael Plasencia 1/21

1. There profit is split in 2 (2 brothers).
   Expence - Income - 40¢ they pay per hour

h. x = w - 0.4H

Min 2 - 0.4(3/3)

2 - .27

Min 1.73

Watch rounding

87¢ profit per fam

Max 5 wagon

13/30 x 5 = 65/30 = 2 1/6 = 2.17

1 x .87 = 4.35 profit

2 = 5 x 44

Profit per wagon

1 - .4(3/3)

1 - .13

87¢ profit per wagon

2 = 44¢ per brother

13/30

Non 2 wagons

2 x 44 = 87¢

Congo 2 wagons

2 x 44 = 87¢

44/11 = 4 families

4 x 4.84 = 4 families

A2 .5W + .25M + .1F + .05C

50¢ per wagon
25¢ per men
10¢ woman
5¢ a child

Min .5(2) + .25(3) + .1(1) + .05(3)

1 + .75 + .1 + .15

1.75 + .25

Price min = 200

Max .5(5) + .25(6) + .1(6) + .05(13)

2.5 + 1.5 + .6 + .65

4 + 1.25

P max = 5.25

Total 12.95 12.45

Non (.5)(2) + .25(8) + .1(2) + .05(2)

1 + 2 + .2 + .1

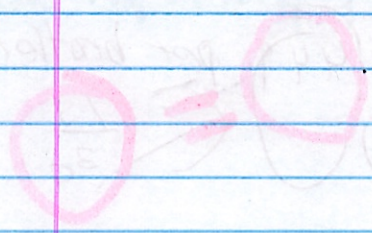
P Non = 3.30

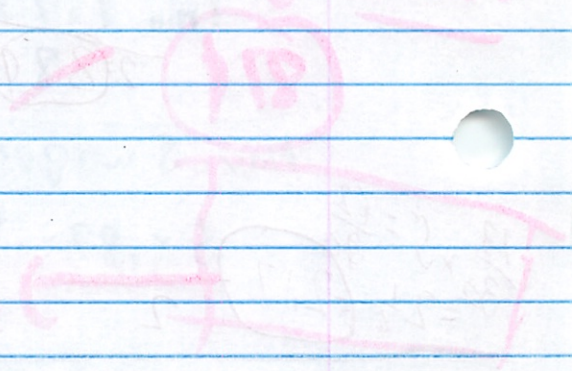
Congo .5(2) + .25(1) + .1(2) + 19(.05)

1 + .25 + .2 + .95

1.25 + 1.15

P congo = ~~2.40~~ 1.90





Summery Phrases

1/25

Let M be # of Men in a family ← Review

- M + F = num of adults (in fam) | MG

2 + 1

3 adults in fam

$\frac{\text{men}}{\text{family}} \times \frac{\text{gross}}{\text{day}}$) per

- M + W + C = num of people in fam

2 + 1 + 3

6 = num of people in fam

- FC = # of children traveling in F trains

$25 \times 3 = 7$ $\frac{\text{Family}}{\text{train}} \times \frac{\text{Children}}{\text{family}}$

- HD = amount of water consumed by or on trail

$\frac{\text{gallons per av}}{\text{day}} \quad \frac{\text{days}}{\text{trail}} \quad 2 \times 169 = 338$

- (BD) = amount of water consumed by 1 train in gallons

× ((M + W + C) 25)

(15.169) [(2 + 1 + 3) 25] $\left(\frac{\text{gallons per person}}{\text{day}} \quad \frac{\text{day}}{\text{trail}}\right) \times \left(\text{M+W+C}\right) \frac{\text{Fam}}{\text{train}}$

84.5 (5 × 25)

84.5 (150)

12675

MF : men on a train

$\frac{\text{men}}{\text{family}} \times \frac{\text{family}}{\text{train}}$ $2 \times 25 = 50$ men per train

HA

$\frac{\text{gallons ox}}{\text{day}}$ $\frac{\text{oxen}}{\text{yoke}}$

YAP $\frac{\text{ox}}{\text{yoke}}$ $\frac{\text{pounds}}{\text{ox}}$? pounds per yoke

X

$1{,}200 \times 2 = 2{,}400$

YAP

$\frac{\text{yokes}}{\text{wagon}} \times \frac{\text{oxen}}{\text{yoke}} \times \frac{\text{weight}}{\text{ox}}$ $\frac{3}{1} \times \frac{2}{1} \times \frac{1600}{1}$

X?

$(2 \times 3) \times 1200 = 7200$ weight per ox

FDD

$\frac{\text{Families}}{\text{Train}}$ $\frac{\text{water}}{\text{day}}$ $\frac{\text{day}}{\text{trail}}$

X

Ox Expression #9

1/25

1. W + M + C = # of people in a family
2. B(W+M+C)
3. The amount of water consumed by 1 ox and 1 person over the length of the trail.
4. (W+M+C)F
5. FM - the number of men in a train

   $\frac{\text{men}}{\text{family}}$ $\frac{\text{family}}{\text{train}}$

6. HO $\frac{\text{water by oz}}{\text{day}}$ $\frac{\text{day}}{\text{trip}}$
7. $\frac{\text{Woman}}{\text{family}}$ $\frac{\text{Load}}{\text{wagon}}$ CNO does not make sense

   Woman per family wagons - doesn't make sense
8. VF = number of wagons on the train

   $\frac{\text{wagons}}{\text{family}}$ $\frac{\text{family}}{\text{train}}$

   VFT = number of wagons on a train

   $\frac{\text{wagon}}{\text{family}}$ $\frac{\text{family}}{\text{train}}$ / $\frac{\text{Yoak}}{\text{wagon}}$

If I see #10
This thing

1/25

1. Let O = num of indians in 1942
Let N = num of indians in 1900

$O-(O\times.9)=N$ $O-90\%O=$ The amount of indians left

2 make it go down

$A-(A\times.05)=B$ B = # of adults at Wyoming

$C-(C\times.1)=D$ D = " " children " "

People left = $.95A+.9C$

Small

$4-(4\times.05)$ you could round down
$4-.2=3.8\to 4$ No Change
$3-(3\times.15)$
$3-.45=2.55\to 3$ No Change

Large

$12-(12\times.05)$
$12-.6$
$12-.4=11.6\to 11$ Lost 1
$13-(13\times.1)$
$13-1.3=11.7$ Lost 1

Non

$10-(10\times.05)$
$10-.5=9.5$ round up Last No Change
$2-(2\times.1)$
$2-.2=1.85$ No change

Complo

$3-(3\times.05)$
$3-.15=2.85$ No change
$9-(9\times.1)$
$9-.9=8.1$ Lost 1
$15-(15\times.05)$
$15-7.5=14.25$ Lost 1
$9-(9\times.1)$
$9-.9=8.1$ Lost
$2-(2\times.05)$ $2-.1=1.9$
$1-(1\times.1)$ Lost None
$1-.1=.9$

For every 10 adults, I will be lost

For every 5 kids, I will be lost

Adults	Kids	Left
4	3	7
12	13	23
16	2	N 12
3	9	11
15	9	22
2	1	3

2, variable

Watch rounding

Name Michael Plasmeier

Use the lists of Variables on pages 218 and 219 for this worksheet.
Write a **summary phrase or sentence** describing the following algebraic expressions.

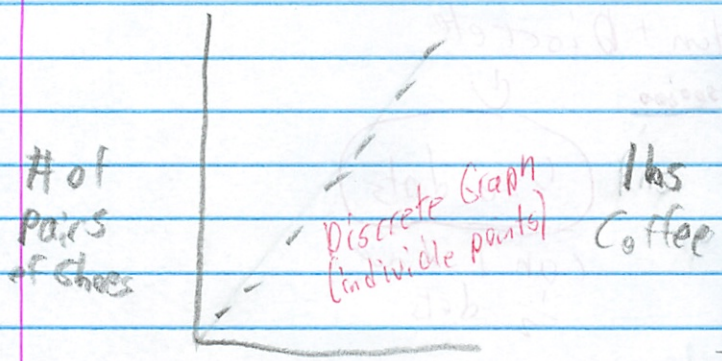
1. FC # of children on the train
2. FW # of women on train
3. (M + W + C)F # of people on train
4. HD amount of water consumed by ox on trail
5. AY # of oxen per wagon
6. (AY)HD amount of water consumed by all oxen in a wagon over the trail
7. (M + W + C)B Amount of Beverage consumed by 1 family for 1 day

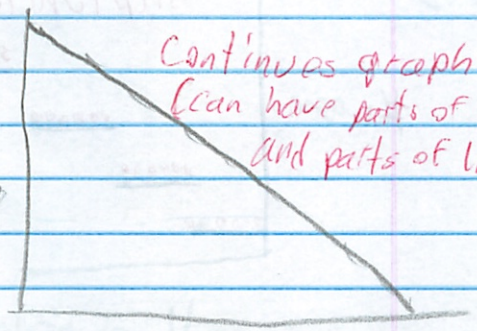
Write an **algebraic expression** for each of the following summary phrases.

8. The amount of grass eaten by one wagon's oxen in one day. G(AY)
9. The total number of people on one wagon train. (M+W+C)F
10. The total number of children on all the wagon trains in one year. (CF)T
11. The amount of water consumed by one person and one oxen on the entire trip. (H+B)D

Wagon Train Graph

p 223





Increasing

The more people in the train, the more shoes you need

Decreasing

The more days elapsed, the less lbs of coffee left

Horizontal (x)

independent variable

In (most of the time x is time)

Vertical

y axis

dependent variable (out)

1. Yes because the line went down at a constant rate

2. A Everyone took a drink - other water source
   B Filling up at river - filled up
   C Night time - no one drinking - at other source

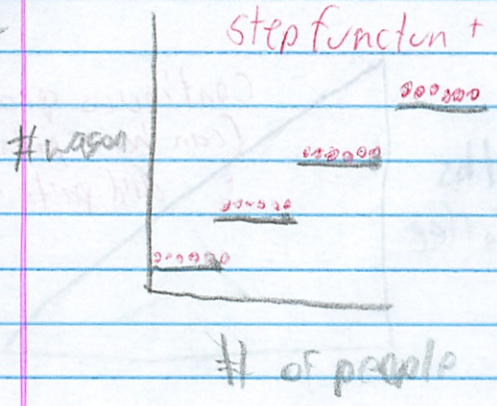
   can't because its distance not time

! constant rate of change for slope

3. ~~X~~ - steepest part of graph

4 half oxen won't pull half a wagon

Part 2

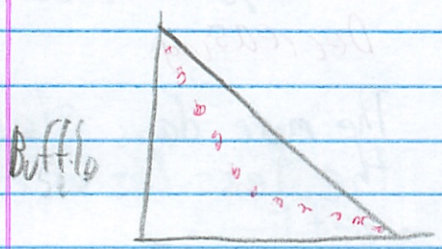


step function + Discrete

Use dots

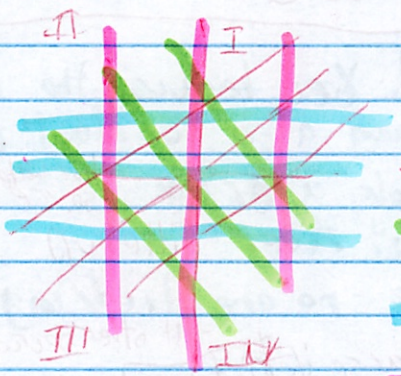
can't have ½ dots

6.



* remember dependent + independent

still be discrete graph because can't have half buffalo even though the #s are so large



— positive slope (I + III)

— negitive slop (II + IV)

— horizontal → no slope (undefine)

— vertile → 0 slope

$\frac{\Delta y}{\Delta x} = \frac{-4}{0}$ = undefined

Correct Colores

positive

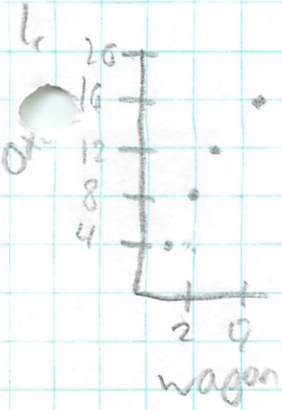
negitive

vertical

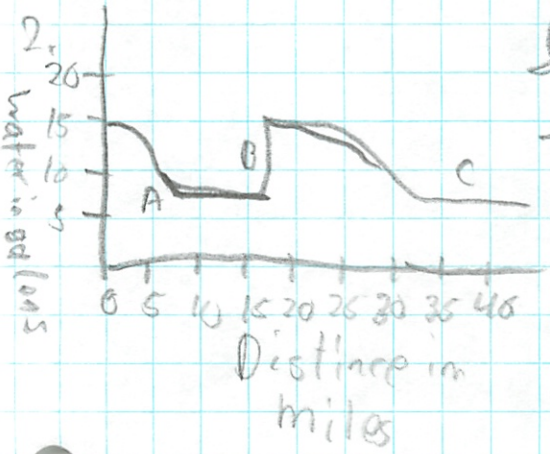
horizontal

In need of numbers

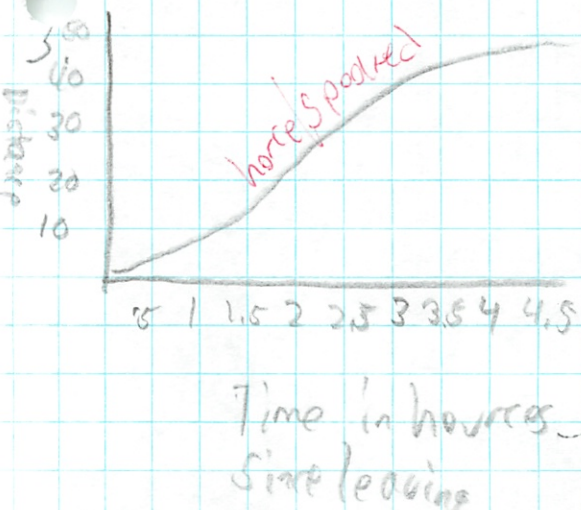
4/27

4. 

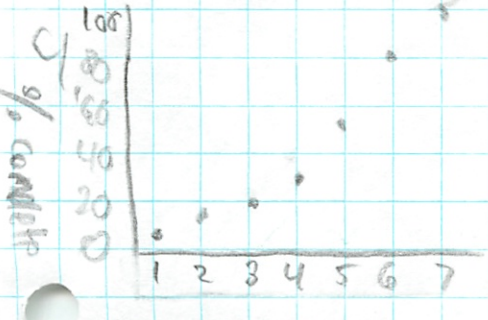
I assume you need 4 oxen per wagon and the axis started at 0. Really need 6



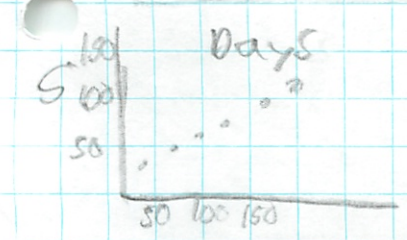
I assumed they didn't travel fast and it was hot so they drank lots of water or there were lots of people.



I assumed their top speed was 10 mph which is probably too fast to sustain for that long and again you could "zoom out" the graph + number

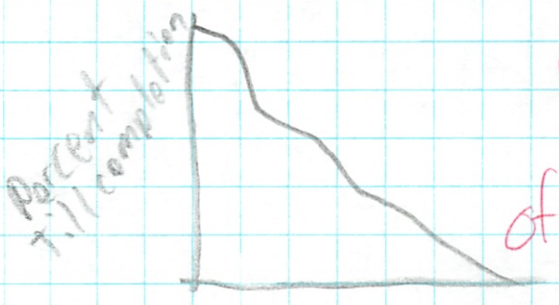


I assumed the flow was 7 days long so I assumed at the end was complete. There was already $ in it and I had assume ticket price

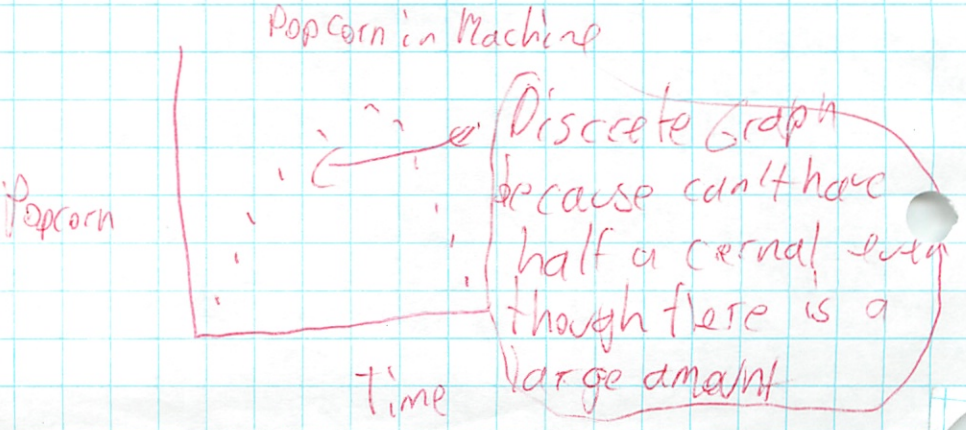


Graph Sketches #11 1/27

1. Hunger level depends on what time of day it is. As time goes on hunger increases or decreases (when they eat etc)
2. The Pow completation rate increaases, so more of the POW is completed each day. Also the person worked on the POW every day.
3. It is night time and then people start buying sodas so the level in machines goes down. Then the man refills the machie at end of the day.
4. The more people that come into the theater, the till goes up. It is a descrete graph, because you can't have half a person and they all pay the entire charge. More people in: more $ Money already in - Cash only



Part 2 of Research Paper



Expression Review

if $x = -1$, $y = 3$

$-x^2 - 2xy$

Exponents 1st

$-(-1)^2 - 2(-1)(3)$

$-1 - 2(-3)$

$-1 + 6$

10 5

~~More~~ ~~How do it~~

$-x^2 \neq (-x)^2$

---

if $x = -1$

and y is 3 * x

while 2 is half X

$x = -1$ $y = -3 \div 5$

$-x^2 - 2xy - 7$

$-(-1)^2 - 2(-3)(-1) = 5$

$-1 + 6(-1) + 5$

$-1 + -6 + 5$

$-7 + 5$ 6,5

$-6,5$

The Isshues #12

1/31

1. I had to assume a lot of numbers. It was hard to tell if it would be a large scale or a small scale graph. I also needed to assume the amount of oxen needed per wagon - assume it starts at

2. No the axis does not need to start at 0. If it doesn't start at 0 that is a different "window" of view. I think this same same for both axis. There is no rule, try to start at 0 or stretch

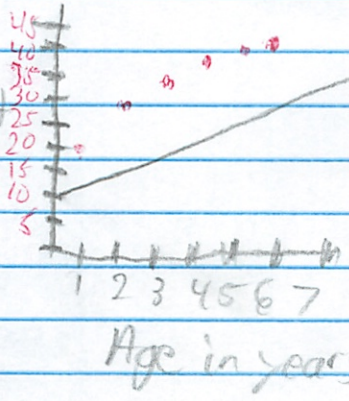
3. It depends on what your data shows. Graphs are a way of showing data.

4. a. Have it make sence
that that is true, or that boys grow 8 in in 1 sec every year and it is not gracual?

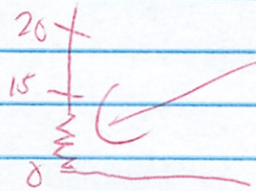
5. People don't grow like that

The scale wasn't consistant

c. went up by 1 then 8 then 1 then 4 then 2



could make it continues not descrete don't have to



5. Discrete because you can't have half a death

In/Out Tables

Slope

2/7

(x)	(y)
In	Out
2	5
-3	-10
1	2

x = independent variable

y = dependent variables

Out = 3 In - 1

$y = 3x - 1$

How to Solve

x	y	
-3	-10	+12
1	2	+3
2	5	
0	-1	

+5 +1 +15

1. put in order
2. get 0

$\frac{3}{1}$ = slope

Put arrows

$\frac{\Delta y}{\Delta x} = \frac{+15}{+5} \quad \frac{+3}{+1} \quad \frac{+12}{+4} = 3$

$y = mx + b$

Look for obvious on graphs like (0,b)

Out Numbered

2/7

1. 3 wagons carry ~~25~~ 24 people
b 5 " " 40 "
c 10 " " 80
d

In	Out
3	~~25~~ 24
5	40
10	80

+2, +5 ; +15, +40

Out = 8 In

$\frac{15}{2}$ $\frac{40}{5}$ $\frac{8}{1}$ Copyed wrong → y = 8x

2. 10 days after leaving 20.5 lbs coffee remaining
15 " " " 18 " " "
35 " " " 8 " " "

Dependent + Independent?

In	Out
10	20.5
15	18
35	8

+5, +20 ; -2.5, -10

$y = -.5x + 23.5$

$\frac{y}{x}$ $\frac{+5}{-2.5}$ $\frac{+20}{-10}$ $\frac{2}{1}$ (2 In = Out)

Started w/ Coffee in there and negitive slope

3. $650 in regester for 25 people
$1000 " " " 75 "
$2500 " " " 256 "

Switch

Go to 6

In	Out
650	25
1000	75
~~1000~~	~~100~~
~~2500~~ 2225	260

350, 1500 ; 50, 175

$\frac{1}{7}$ $\frac{50}{350}$ ~~$\frac{75}{500}$~~ $\frac{1}{6.5}$ ~~$\frac{100}{1000}$~~ $\frac{1}{10}$ ($\frac{1}{7}$) $\frac{175}{1500}$

400 ~~100~~ 225 300

(Out = 7 In) + 475 - Started w/ $ in till

Review/Warm Up

2/8

$2x^3 - \frac{1}{2}y^3$

$2x^3 - \frac{1}{2}x^3$

$2\left(1\frac{1}{16}\right)^3 - \frac{1}{2}\left(-1\frac{1}{2}\right)^3$

$2\left(1\frac{3}{16}\right) - \frac{1}{2}\left(-3\frac{3}{8}\right)$

$3\frac{1}{8} + 1\frac{11}{16}$

$4\frac{13}{16}$ ✓

$2x^3 - \frac{1}{2}x^3$

$2(-1.3)^3 - \frac{1}{2}(.7)^3$

$2(1.69) - \frac{1}{2}(.008)$

$3.38 - .004$

3.376 ✓

$2x^3 - \frac{1}{2}x^3$

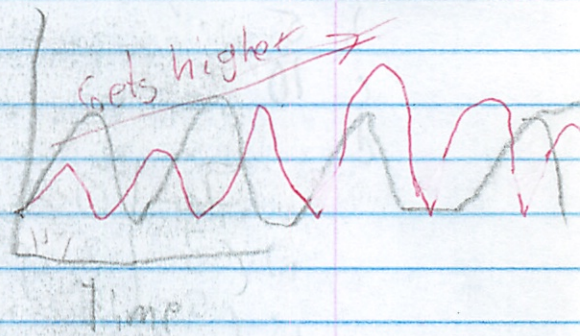
$2(-2)^3 - \frac{1}{2}(-4)^3$

$2(4) - \frac{1}{2}(-64)$

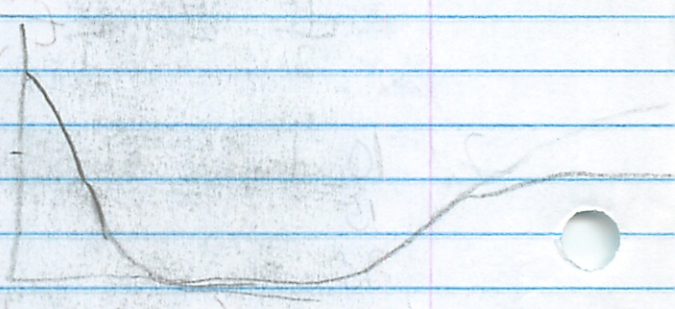
$8 + 32$

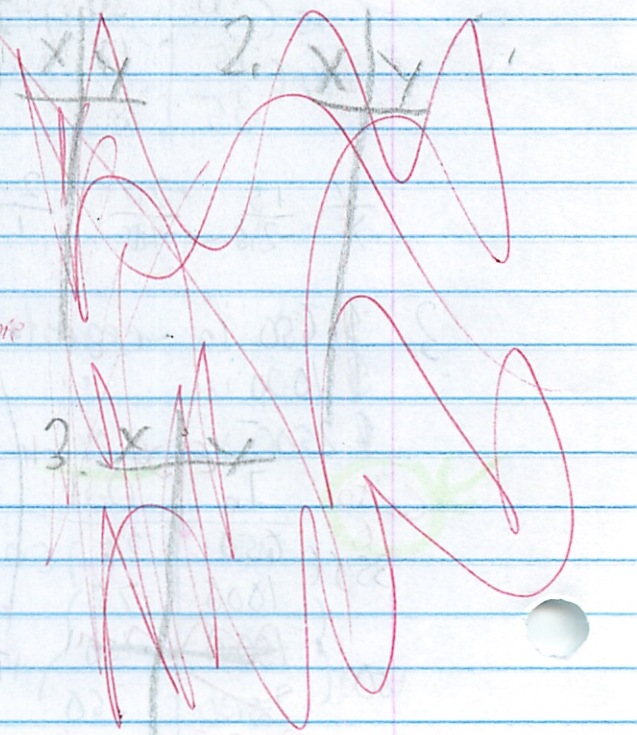
40 ✓

2.

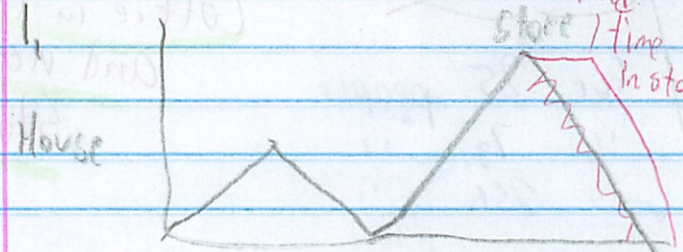


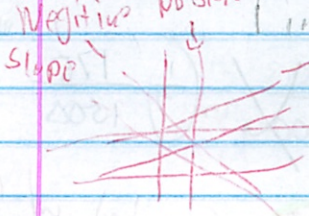
3.





1.





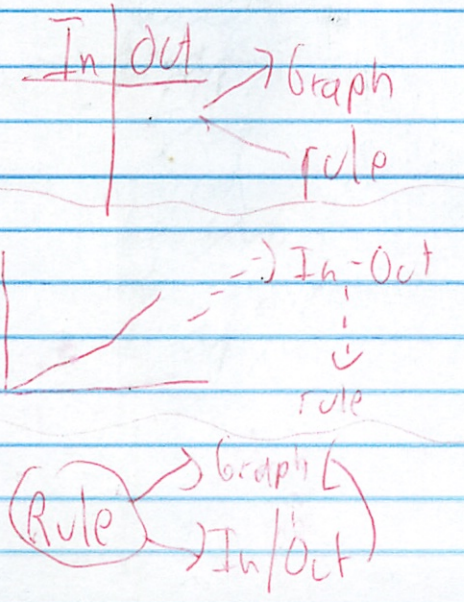
Sits, Graphs, Tables + Rules #13

Michael Plasmeier 2/8

They explain data. The situation lets you fill in all of the titles and labels. The in-out table lists the data points taken from the story and represents on the graph. Some people have called graphs pictures and that is just what they are. The rule for the table is the slope of the picture. By knowing the rule often told in the situations, you can find data points and then make a graph.

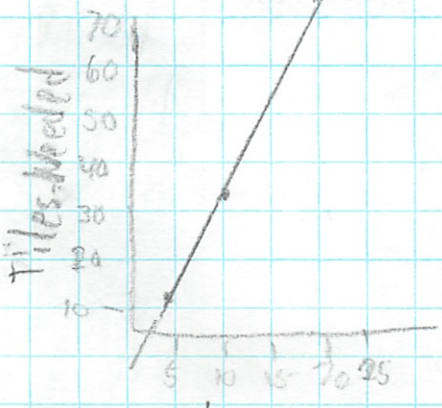
Like the amount of $ in negatives is like the rule for the table and your graph.

graph is a picture of situation Shows relationship



1a. Out = 4 In − 4

In	Out
10	36
4	12
20	76

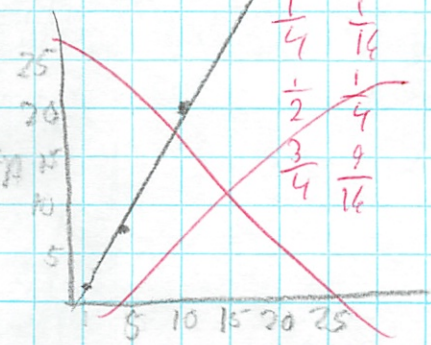


b Out = 2 In

In	Out
1	2
4	8
10	20

$y = x^2$

In	Out
3	9
6	36
0	0
−4	16
¼	1/16
½	¼
¾	9/16

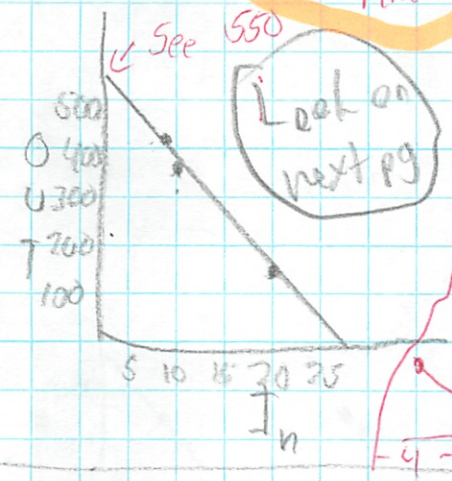


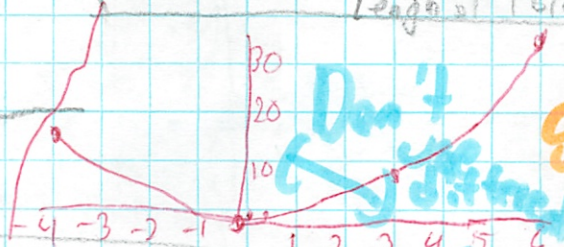
1c Out = −20 In + 550

negitive slope

In	Out
7	410
10	350
20	150

linear = straight line





2. $3x + 2y = 9$

3or+

X	Y
5	−3
10	−10.5
0	4.5
2	1.5
−5	12

Put it on blue line

watch lines

Use negitives + decimals

2. $y^2 = x$

X	Y
9	3
−9	−3
4	2
0	0

Do 0)

why do pts not line up

$x + 2y = 1$

In	Out
0	.5
-2	1.5
-1	1
1	0
$\frac{1}{2}$	$\frac{1}{4}$
$-\frac{1}{2}$	$\frac{3}{4}$

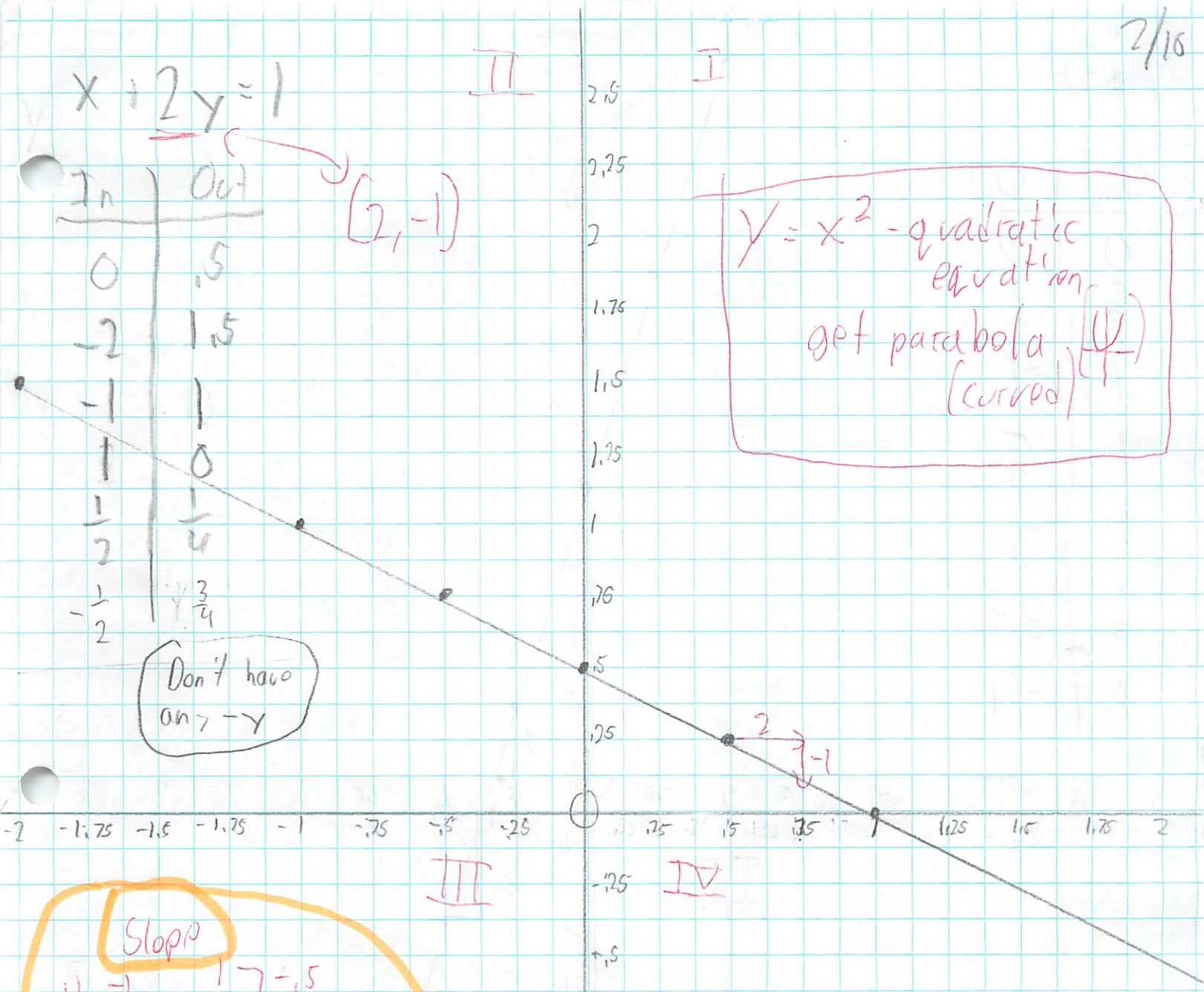
Don't have an $-y$

(2, -1)

II I

III IV

$y = x^2$ - quadratic equation, get parabola (U) (curved)



Slope

$\begin{bmatrix} 1 & -1 \\ 0 & .5 \\ 1 & 0 \end{bmatrix}$ -.5, -.5

$[+1, -.5]$ $\frac{\Delta y}{\Delta x}$

$[2, -1] \rightarrow \frac{-1}{2} \rightarrow -\frac{1}{2}x$

Find x intercept

$x + 2(0) = 1$

$x = 1$

or

$x + 2y = 1$

$-x \quad -x$

$\frac{2y}{2} = \frac{-x+1}{2}$

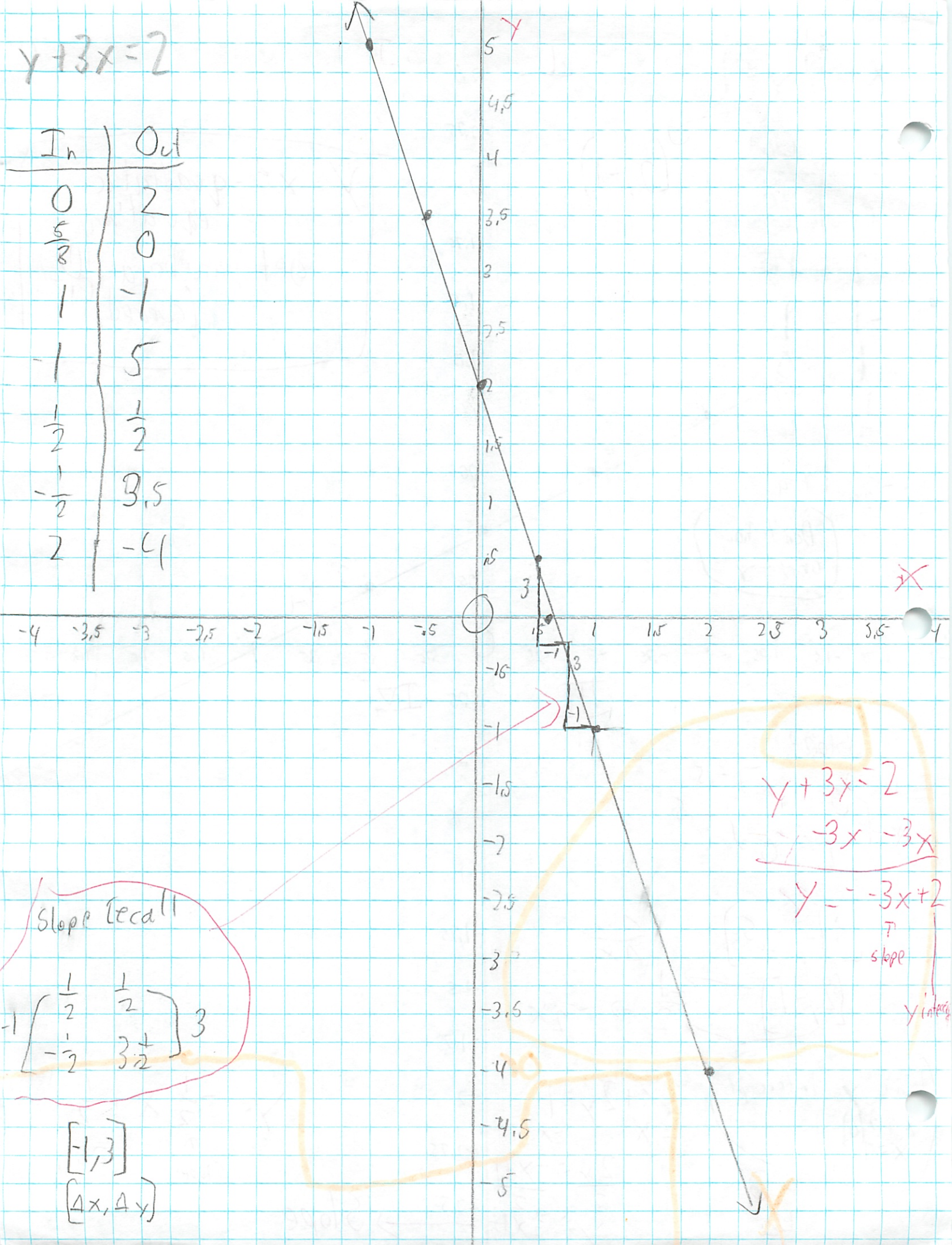
$y = -\frac{1}{2}x + \frac{1}{2}$ → Slope

$y = -\frac{1}{2}x + \frac{1}{2}$

↑ Slope ↑ y-intercept

$y + 3x = 2$

In	Out
0	2
$\frac{5}{8}$	0
1	-1
-1	5
$\frac{1}{2}$	$\frac{1}{2}$
$-\frac{1}{2}$	3.5
2	-4



Slope Recall

$$-1\begin{bmatrix} \frac{1}{2} & \frac{1}{2} \\ -\frac{1}{2} & 3\frac{1}{2} \end{bmatrix} 3$$

$[-1, 3]$

$[\Delta x, \Delta y]$

$y + 3x = 2$

$-3x \quad -3x$

$y = -3x + 2$

↑ slope

y intercept

Try all for In

Negatives

0

a few Decimals / Fractions

In/out table must have:

x and y intercept

x^2 = powers of 2 are quadratic

Parabolas (u) curve

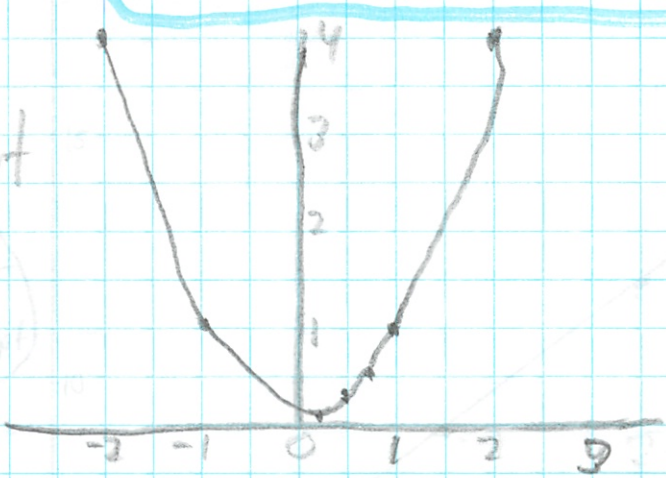
$y = x^2$

In	Out
0	0
$\frac{1}{4}$	$\frac{1}{16}$
$\frac{1}{2}$	$\frac{1}{4}$
$\frac{3}{4}$	$\frac{9}{16}$
1	1
2	4
-1	1
-2	4

same →

$y = x$

In	Out
0	0
$\frac{1}{4}$	$\frac{1}{4}$
$\frac{1}{2}$	$\frac{1}{2}$
$\frac{3}{4}$	$\frac{3}{4}$
1	1
2	2



$y: -20x + 550$

$y: 4x - 4$

Find y-intercept

$(0, 550)$

$(0, -4)$

y-intercept

$(1, 0)$

$(27.5, 0)$

Linear

Must be 0

solve

Get x intercept

hor x → $0 = -20x + 550$

add y intercept → $-550 \quad -550$

Divide by x → $\frac{-550}{-20} = \frac{-20x}{-20}$

$27.5 = x$

$0 = 4x - 4$

$+4 \quad +4$

$\frac{4}{4} = \frac{4x}{4}$

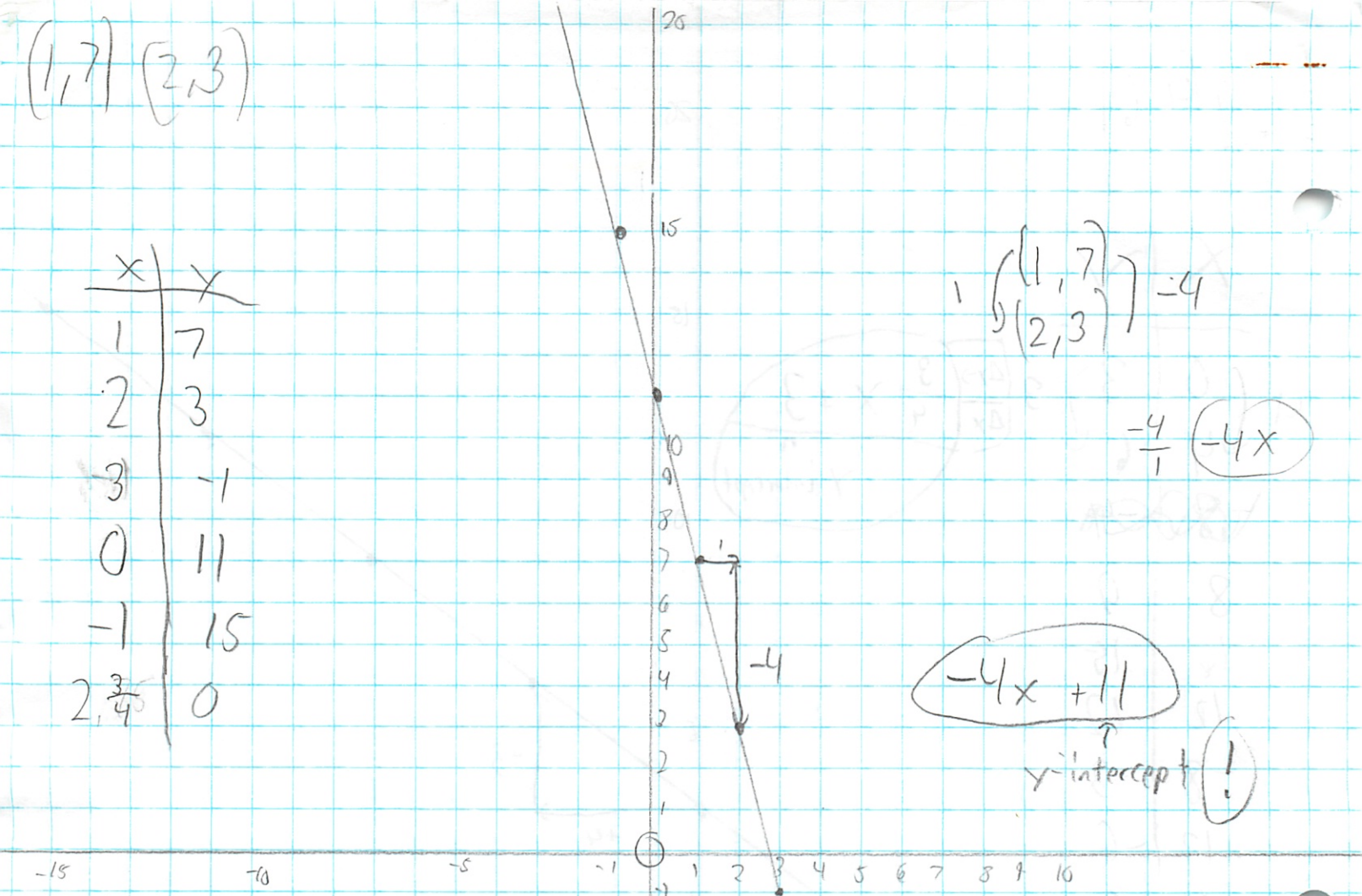
$1 = x$

(1,7) (2,3)

x	y
1	7
2	3
3	-1
0	11
-1	15
$2\frac{3}{4}$	0

$\frac{(1,7)}{(2,3)} = -4$

$\frac{-4}{1}$ $-4x$



$-4x + 11$

y-intercept !

Find x so sub for x
get rid of #

$y = -4x + 11$

$0 = -4x + 11$
$-11 \quad -11$

$-11 = -4x$

$11 = 4x$

$2.75 = x$

x^2 = powers of 2 are quadratic

Parabolas (u) curve

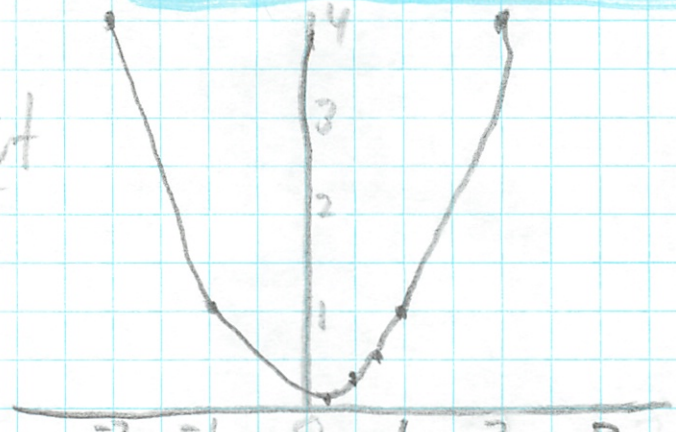
$y = x^2$

In	Out
0	0
$\frac{1}{4}$	$\frac{1}{16}$
$\frac{1}{2}$	$\frac{1}{4}$
$\frac{3}{4}$	$\frac{9}{16}$
1	1
2	4
-1	1
-2	4

$y = x$

In	Out
0	0
$\frac{1}{4}$	$\frac{1}{4}$
$\frac{1}{2}$	$\frac{1}{2}$
$\frac{3}{4}$	$\frac{3}{4}$
1	1
2	2

SAME →



$y: -20x + 550$

$y: 4x - 4$

Find y-intercept

$(0, 550)$

$(0, -4)$

y-intercept

$(1, 0)$

$(27.5, 0)$

Linear

Must be 0

Solve

$0 = 4x - 4$

$+4 \quad +4$

$\frac{4}{4} = \frac{4x}{4}$

$1 = x$

Get x intercept

hor x → $0 = -20x + 550$

Add y intercept → $-550 \quad -550$

Divide by x → $\frac{-550}{-20} = \frac{-20x}{-20}$

$27.5 = x$

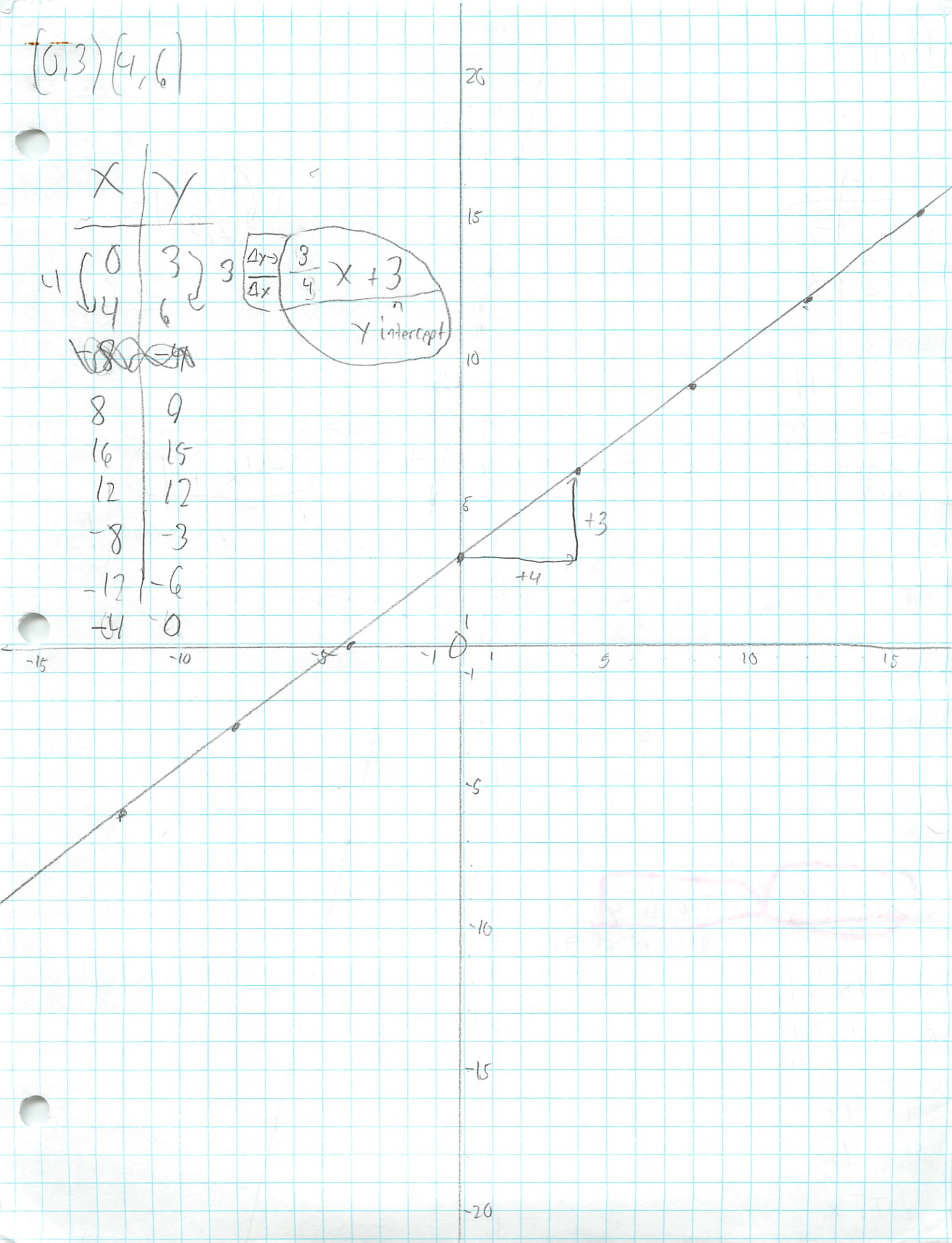
(0,3) (4,6)

x	y
0	3
4	6
~~8~~	~~-4~~
8	9
16	15
12	12
-8	-3
-12	-6
-4	0

4 | 3

$\frac{\Delta y}{\Delta x} \rightarrow \frac{3}{4}x + 3$

y intercept



(1, 7) (2, 3)

x	y
1	7
2	3
3	-1
0	11
-1	15
2.75	0

$\frac{-4}{1}$ $(-4x)$

$-4x + 11$

y-intercept !

Find x → so sub for x

get rid of #

$y = -4x + 11$

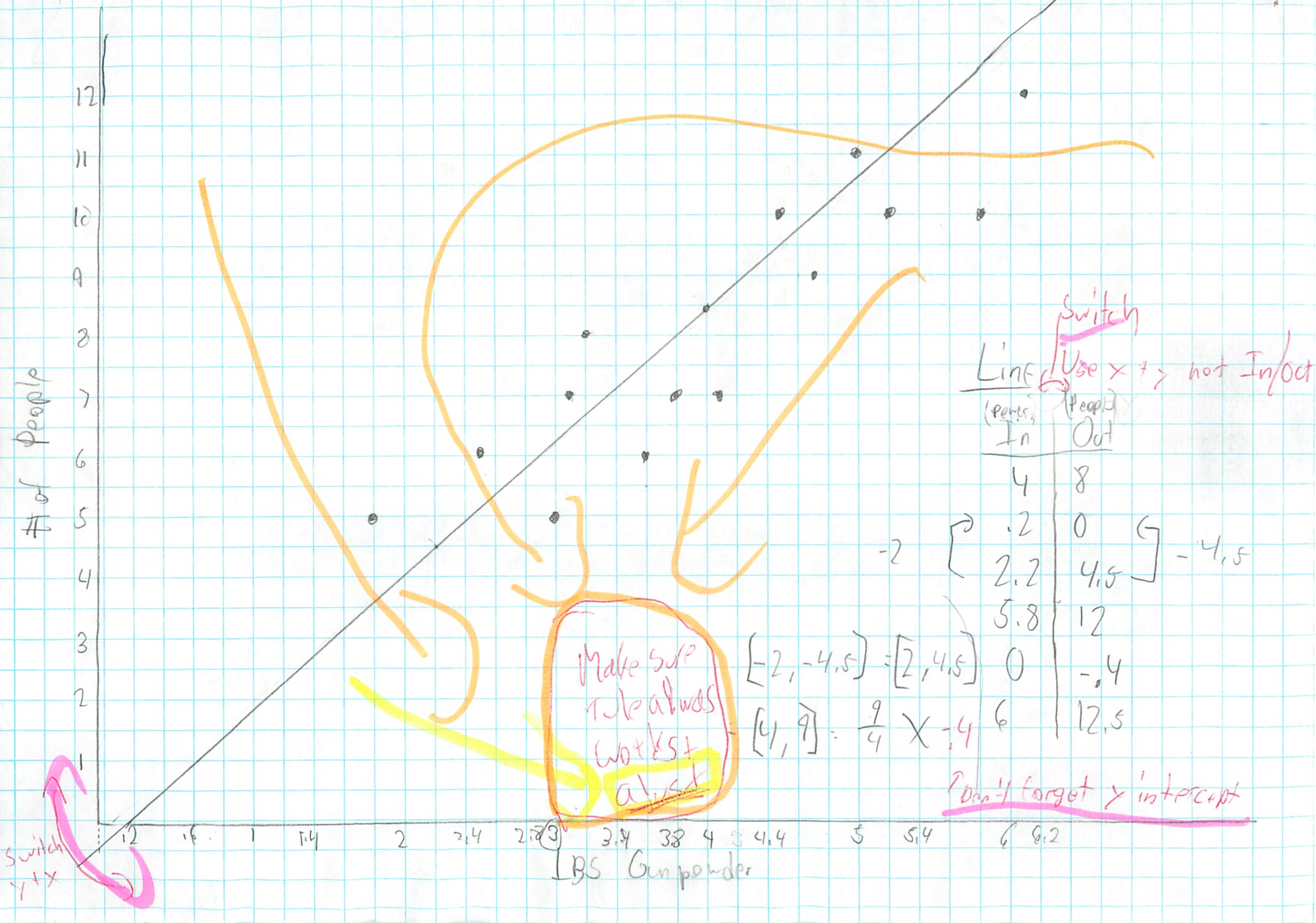
$0 = -4x + 11$

$-11 = -4x$

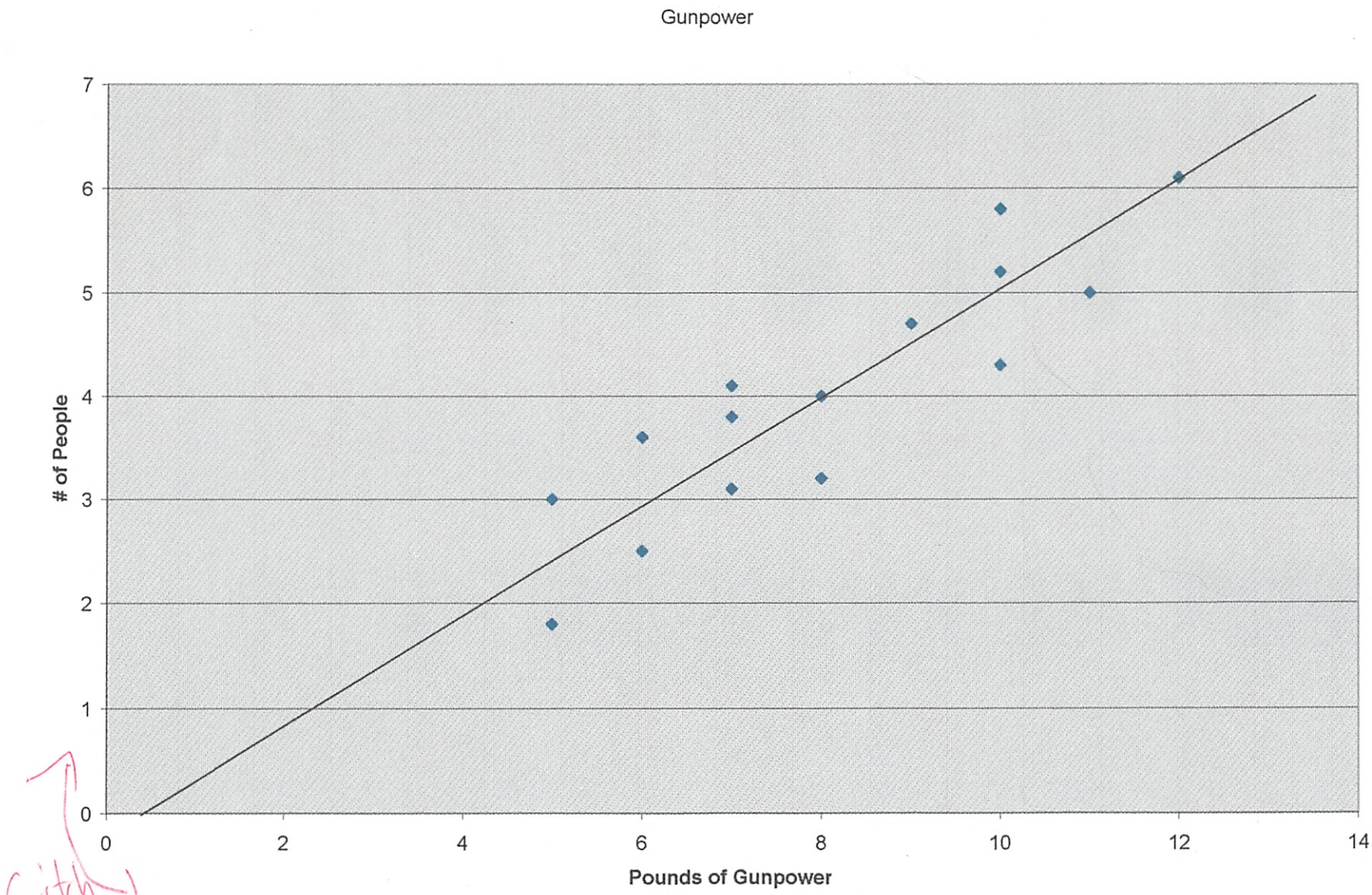
$11 = 4x$

$2.75 = x$

Gunpowder

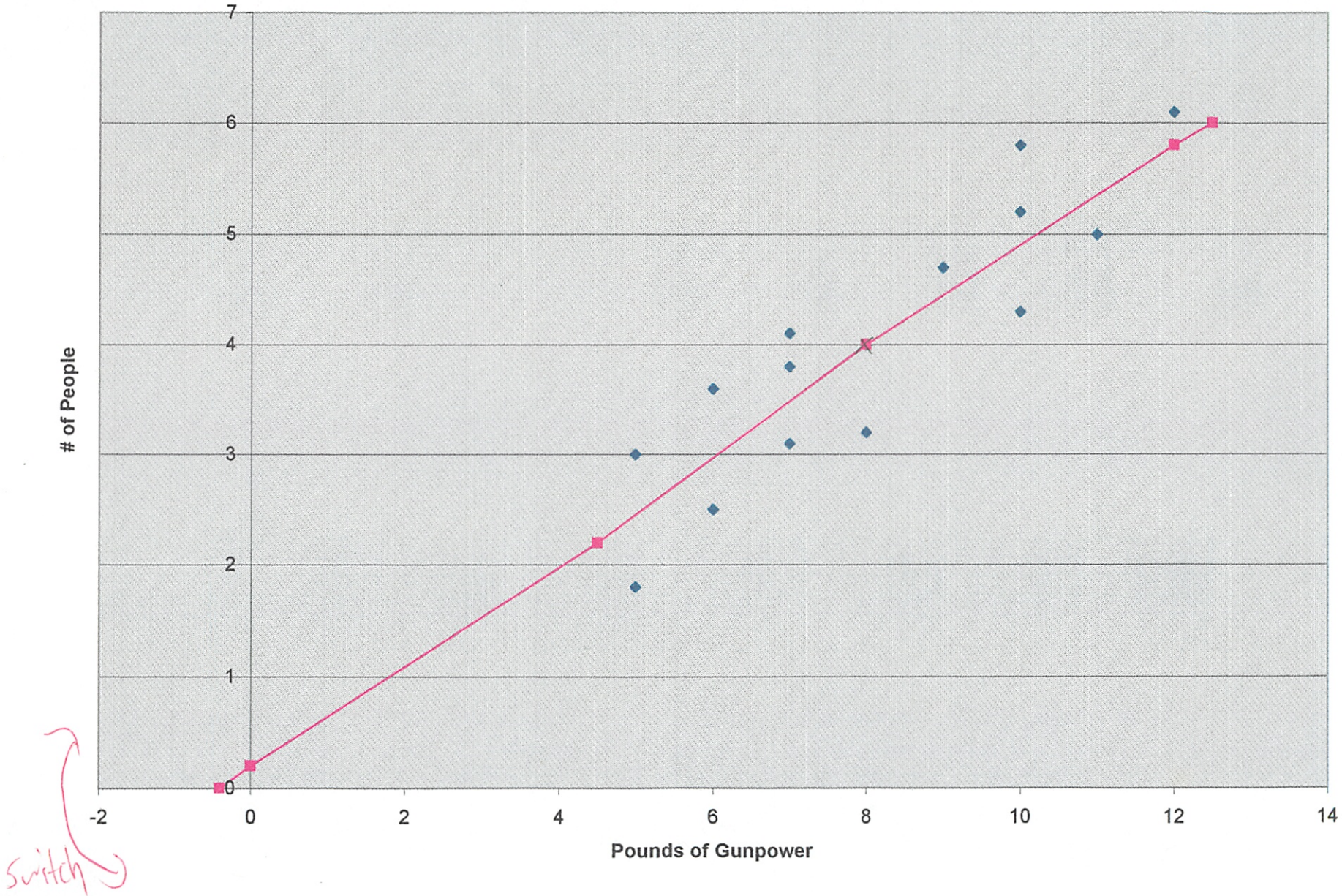


# of People
12
11
10
9
8
7
6
5
4
3
2
1
.12
.16
1
1.4
2
2.4
2.8
3
3.4
3.8
4
4.4
5
5.4
6
6.2
LBS Gunpowder
Make sure rule always works + adjust
Switch y + x
Switch
Use x + y not In/Out
Line
(pounds) In
(people) Out
4 8
.2 0
2.2 4.5
5.8 12
0 -.4
6 12.5
-2
-4.5
[-2, -4.5] = [2, 4.5]
[4, 9] = 9/4 X -.4
Don't forget y intercept

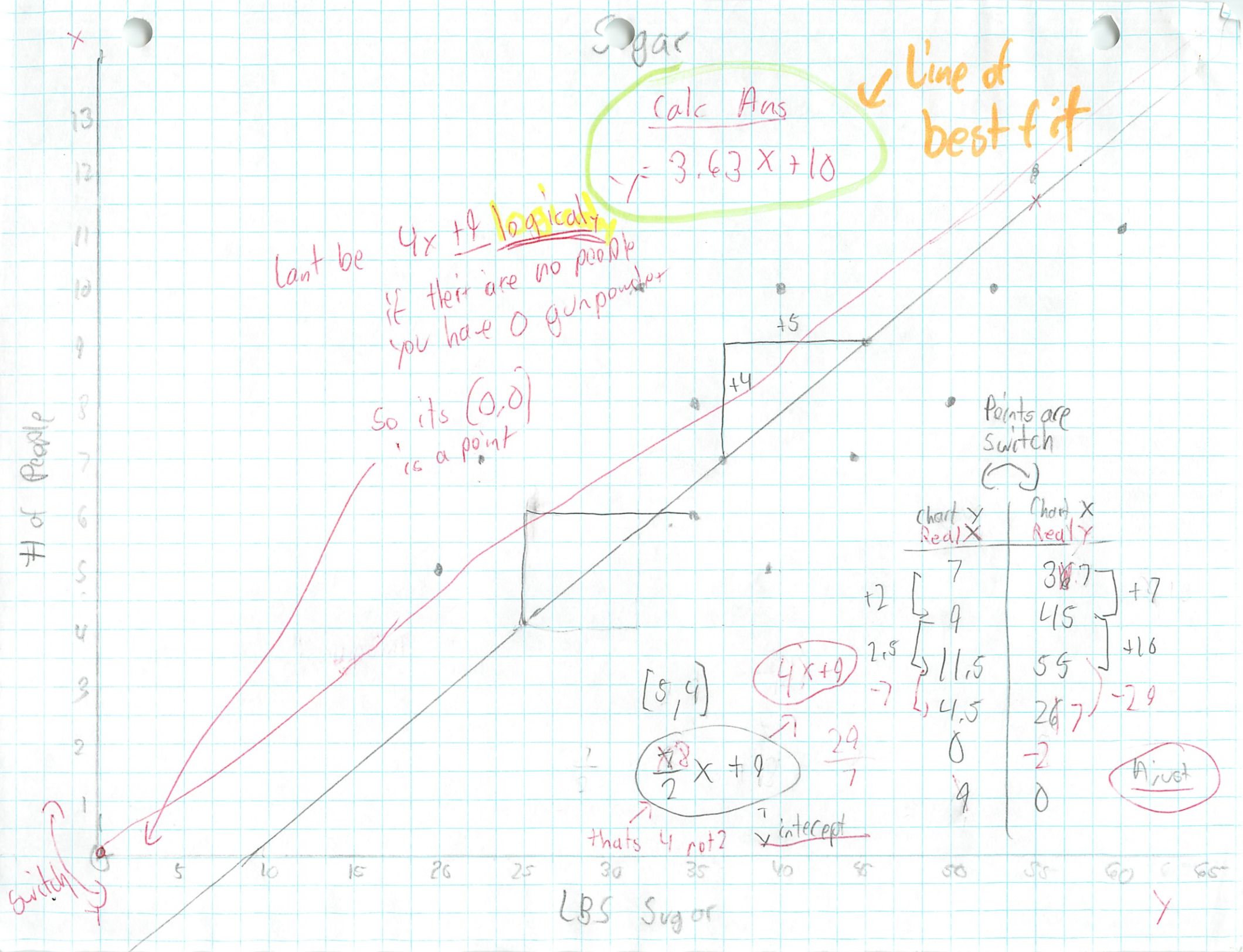


switch

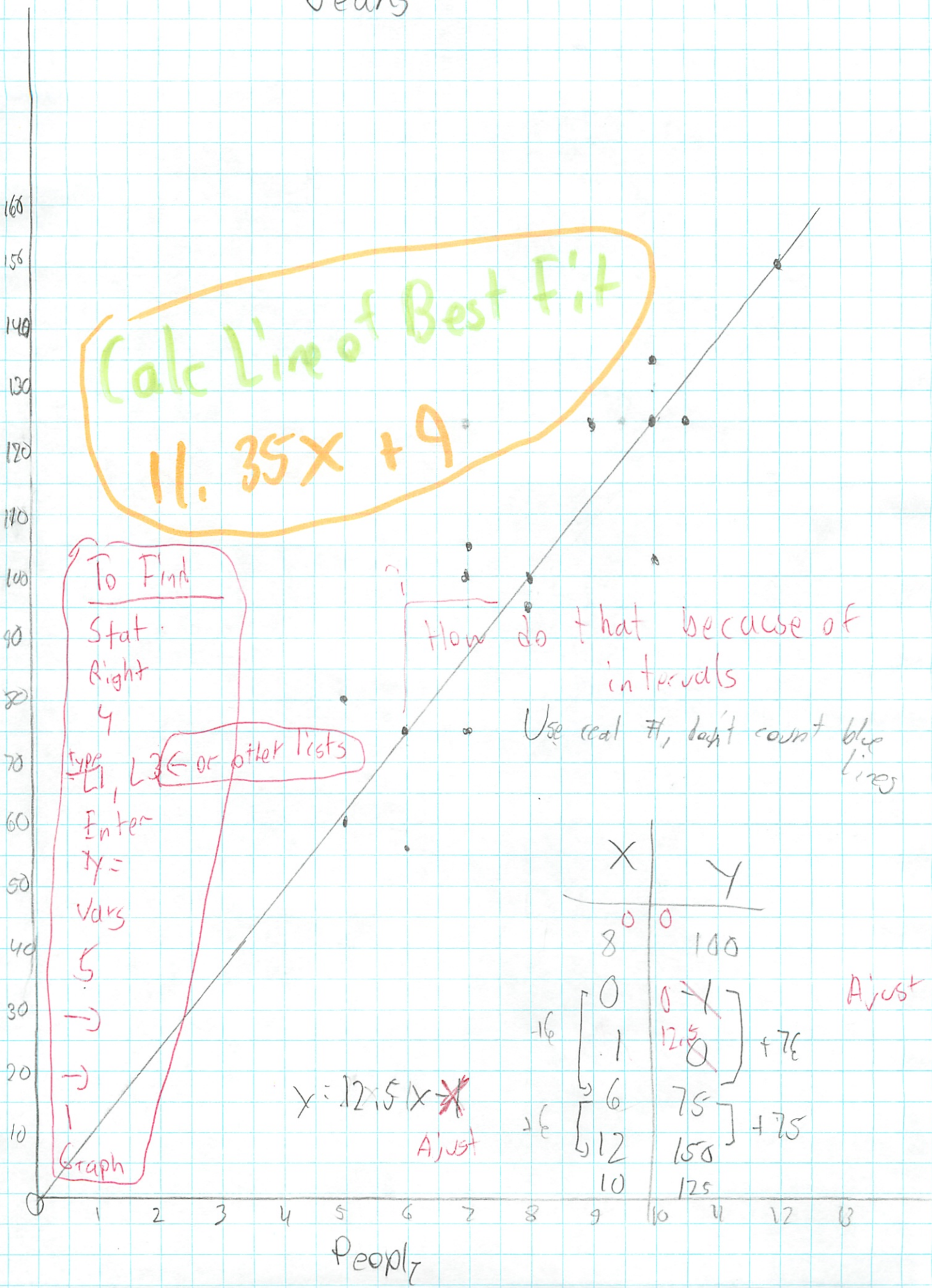
$\frac{9}{4}x - .4$



switch


Sugar
Calc Ans
y = 3.63x + 10
Line of best fit
Can't be 4x + 9 logically
if there are no people
you have 0 gunpowder
So its (0,0)
is a point
+5
+4
Points are switch
Chart y Real x
Chart x Real y
7
9
11.5
4.5
0
9
+2
2.5
-7
38.7
45
55
26.7
-2
0
+7
+16
-29
[5,9]
4x+9
29/7
8/2 x + 9
thats 4 not 2
y intercept
Almost
# of People
LBS Sugar
x
y
Switch
0
5
10
15
20
25
30
35
40
45
50
55
60
65

Beans


Calc Line of Best Fit
11.35x + 9
To Find
Stat
Right
4
Type
L1, L3 ← or other lists
Enter
Y=
Vars
5
→
→
1
Graph
How do that because of intervals
Use real #, don't count by lines
X
Y
0
0
8
100
0
0
1
12.5
6
75
12
150
10
125
-16
+76
-36
+75
Adjust
x: 12.5 x
Adjust
LOS Beans
People
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
1
2
3
4
5
6
7
8
9
10
11
12
13

(4,2) (8,3)

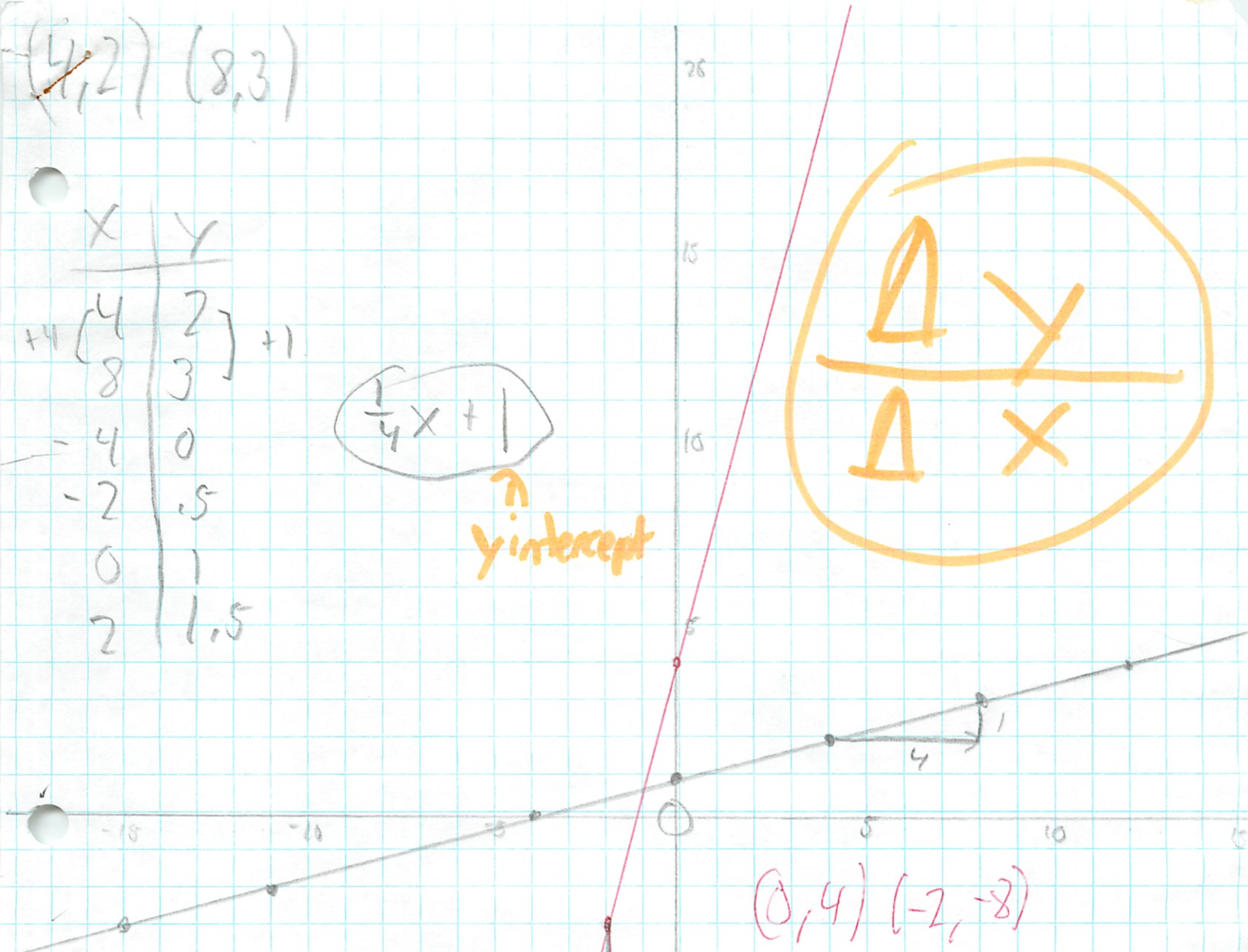
x	y
4	2
8	3
-4	0
-2	.5
0	1
2	1.5

+4 +1

$\frac{1}{4}x + 1$

y intercept

$\frac{\Delta y}{\Delta x}$



(0,4) (-2,-8)

x	y
0	4
-2	-8
-4	-20
2	16
5	34
$-\frac{2}{3}$	0

-2 -12

$\frac{4y}{\Delta x}$ $\frac{-12}{-2}$ $\frac{6}{1}$

$\frac{-2}{-12}$ $\frac{1}{6}x$

+4

$6x + 4$

$\frac{6}{6}x + 4$

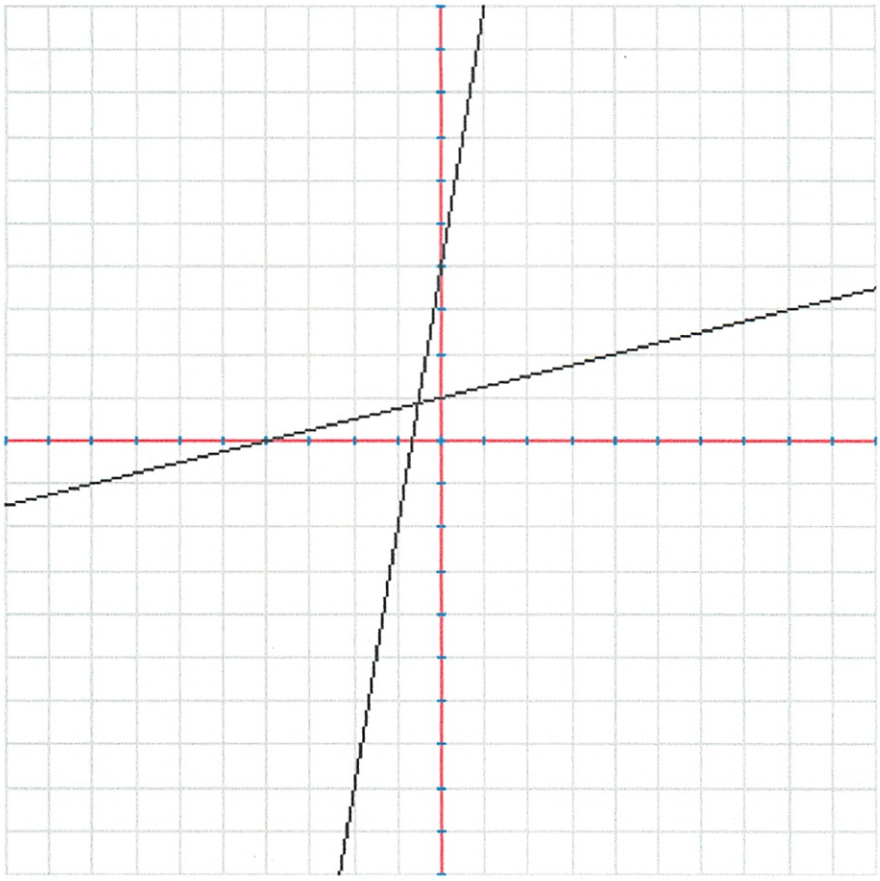
To get x intercept
Sub for y

$0 = 6x + 4$
$-4 \quad -4$

$-4 = 6x$

$\frac{-4}{6} = x$

$-\frac{2}{3} = x$



$x - 2y = -1$

x	y
0	$\frac{1}{2}$
-1	0

To do on calc

Get Slope + y intercept

Use Table Set

ΔTBL to change interval for table

Rewrite

$x - 2y = -1$

$-x \quad\quad -x$

$\frac{-2y}{2} = \frac{-1-x}{2}$

$-y = -\frac{1}{2} - \frac{1}{2}x \rightarrow y = -\frac{1}{2} + \frac{1}{2}x$

Slope + y intercept

y intercept ↓ Slope $\frac{1}{2}$

x-intercept

$x - 2y = -1$

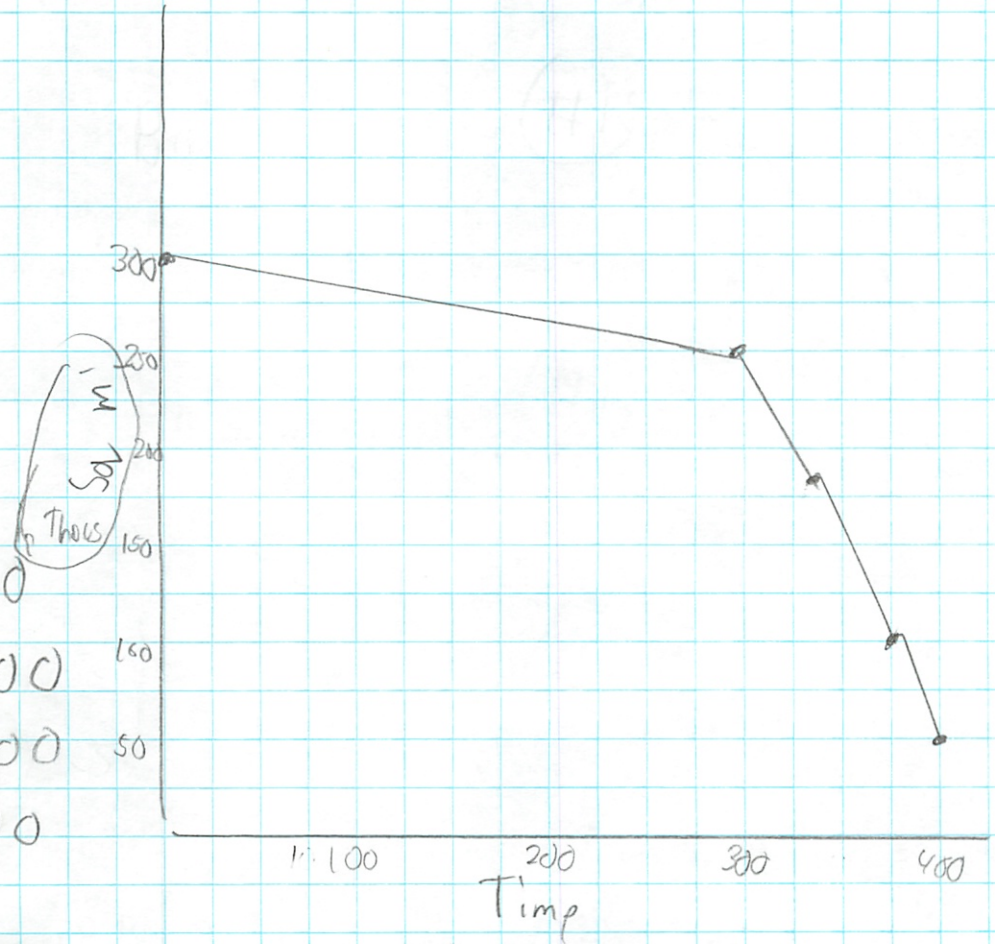
$x - 2(0) = -1$

$x = -1$

Sub for 0

Broken Promises (#19) 2/14

X	Y
0	3,000,000
98	2,500,000
338	1,800,000
368	1,000,000
398	50,000



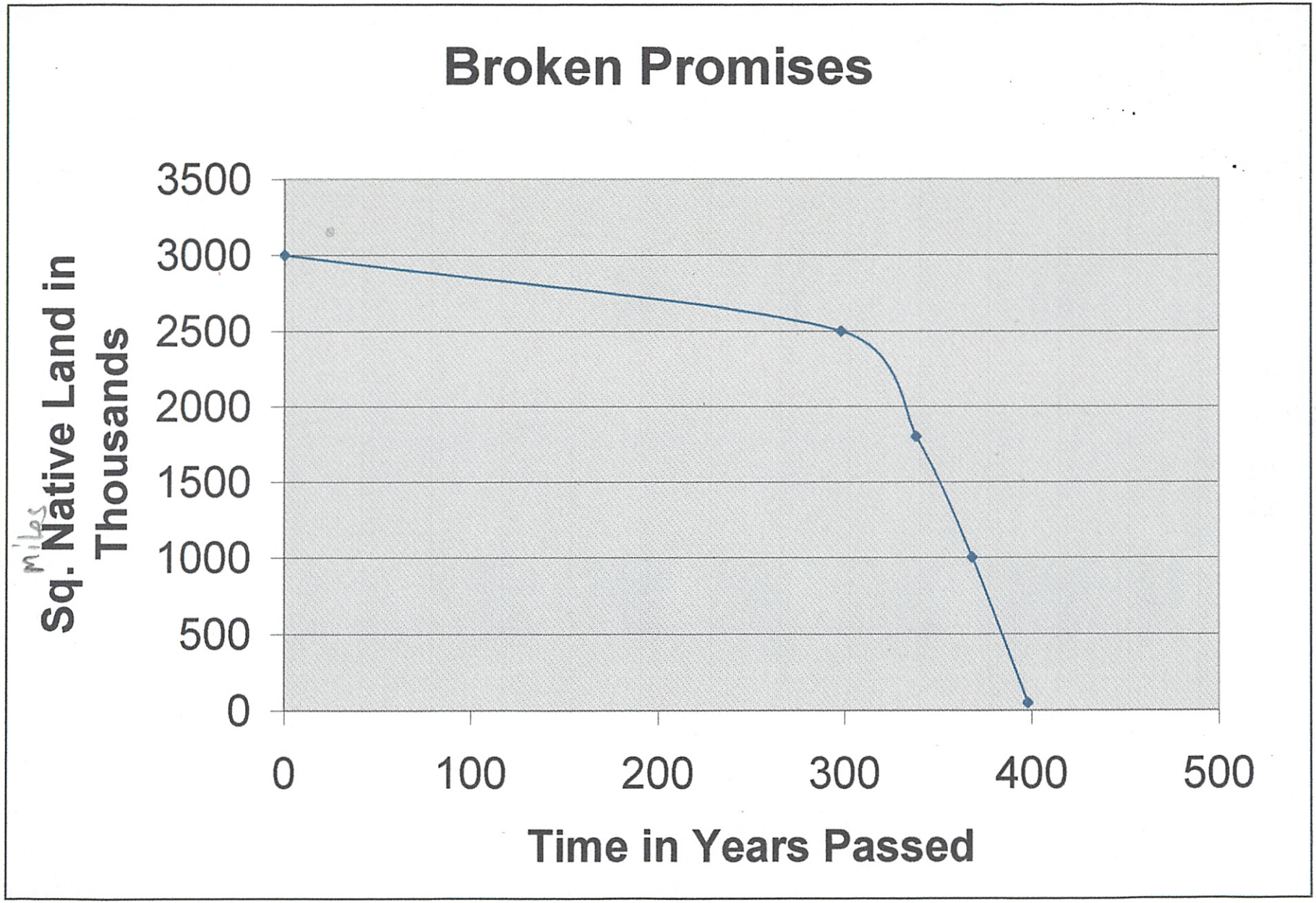
298	500,000
340	700,000
30	800,000
30	50,000

3. 1861 → 2020

4. 1900 → 2020

Passed since
100%

On both cases I would think that in 420 years after the start, the native American land would be gone.


Broken Promises
Sq. Native Land in Thousands
miles
3500
3000
2500
2000
1500
1000
500
0
0
100
200
300
400
500
Time in Years Passed