Sanford

Slopes by Hand

1.

$(1,76)\ (6,36)$	$(2,64)\ (4,48)$	$(1,76)\ (3,48)$	$(2,64)\ (6,36)$
-40	-16	-28	-28
$\frac{-40}{6}$	$\frac{-16}{2}$	$\frac{-28}{2}$	$\frac{-28}{4}$
$-6\frac{2}{3}$	-8	-14	-7
$y=-6\frac{2}{3}x+b$	$y=-8x+b$	$y=-14x+b$	$y=-7x+b$
$76=-6\frac{2}{3}(1)+b$	$76=-8(1)+b$	$76=-14(1)+b$	$76=-7(1)+b$
$76=-6\frac{2}{3}+b$	$76=-8+b$	$76=-14+b$	$76=-7+b$
$82\frac{2}{3}=b$	$84=b$	$90=b$	$83=b$
$y=-6\frac{2}{3}x+82\frac{2}{3}$	$y=-8x+84$	$y=-14x+90$	$y=-7x+83$

Must pick one of these points

$64-48=16$

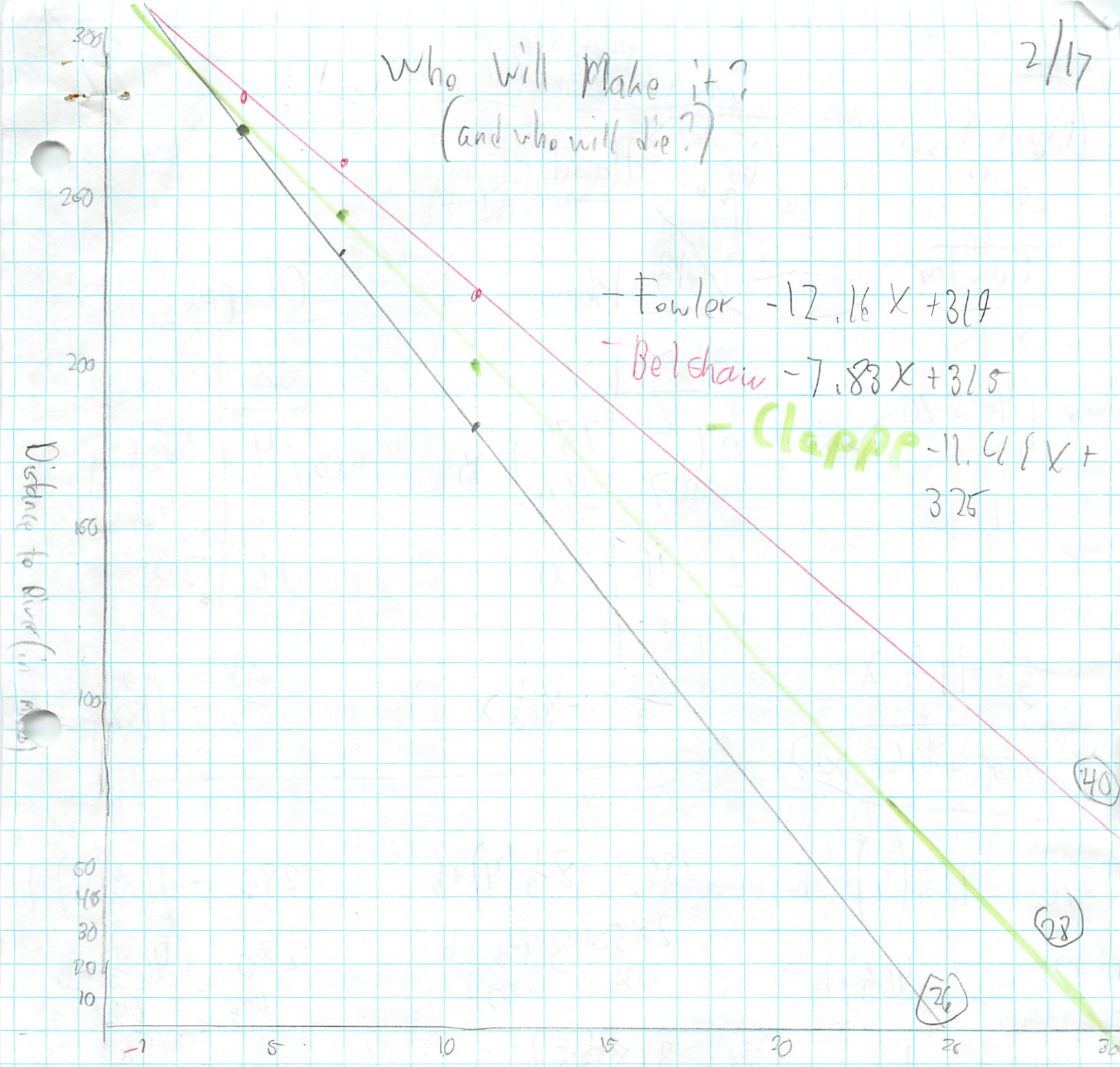
$76-48=28$

$64-36=28$

Mint

$(2,32)\ (6,24)$
-8
$\frac{-8}{4}$
-2
$y=-2x+b$
$32=-2(2)+b$
$32=-4+b$
$+4\ \ +4$
$36=b$
$y=-2x+36$

Who Will Make it? (and who will die?)



1. Fowler and Clappe make it before the 30th day. The calc says Clappe make it on the 28th day, Belsaw won't make it
2. Fowler 1st, Belshaw 2nd, Bellsaw makes it on the 40th day
3. 1st → 2nd = 2 days
   2nd → 3rd = 12 days
   1st → 3rd = 14 days

I found ans by using calc to zoom in when it crossed x axis + counted

2/22

Who will make it

Must pick 2 points that make a fence

Don't these do 2 points

Hand slopes

Fowler

x	y
4	270
7	235
11	185

3 [4 | 270 ; 7 | 235] -35

$\frac{-35}{3} = -11\frac{2}{3}$ x

Belshaw

x	y
4	285
7	260
11	230

3 [4 | 285 ; 7 | 260] -25

$\frac{-25}{3} = -8\frac{1}{3}$ x

Clappe

x	y
4	280
7	245
11	200

+3 [4 | 280 ; 7 | 245] -35

$\frac{-35}{3} = -11\frac{2}{3}$ x

y-intercept - sub for x

$270 = -11\frac{2}{3}(4) + b$

$270 = -46\frac{2}{3} + b$

$+46\frac{2}{3}$ $+46\frac{2}{3}$

$316\frac{1}{2} = b$

$y = -11\frac{2}{3}x + 316\frac{1}{2}$

$285 = -8\frac{1}{3}(4) + b$

$285 = -33\frac{1}{3} + b$

$+33\frac{1}{3}$ $+33\frac{1}{3}$

$318\frac{1}{3} = b$

$y = -8\frac{1}{3}x + 318\frac{1}{3}$

$280 = -11\frac{2}{3}(4) + b$

$280 = -46\frac{2}{3} + b$

$+46\frac{2}{3}$ $+46\frac{2}{3}$

$326\frac{2}{3} = b$

$y = -11\frac{2}{3}x + 326\frac{2}{3}$

$\frac{35}{3} \div \frac{4}{1} = \frac{140}{3}$

$3\overline{)140}$ 46.6 26

$\frac{25}{3} \div \frac{4}{1} = \frac{100}{3}$

Only 3 hand slopes for 3 pts

4 6

More Hand slopes
We will make it

311

Fowler

x	y
4	270
7	235
11	185

-35

$\frac{-50}{4} \quad \frac{-25}{2} \quad (-12\frac{1}{2}x)$

$235 = (-12\frac{1}{2})(7) + b$

$235 = -87.5 + b$

$+87.5 \quad +87.5$

$222.5 = b$

$y = -12\frac{1}{2}x + 222.5$

$-\frac{85}{7} \quad (-12\frac{1}{7}x)$

$270 = (-12\frac{1}{7})(4) + b$

$270 = -25.714 + b$

$+25.714 \quad +25.714$

$295.714 = b$

$y = -12\frac{1}{7}x + 295.714$

Bellshaw

x	y
4	285
7	260
11	230

-30 -55

$\frac{-30}{4} \quad \frac{-15}{2} \quad (-7\frac{1}{2}x)$

$230 = (-7\frac{1}{2})(11) + b$

$230 = -82.5 + b$

$+82.5 \quad +82.5$

$312.5 = b$

$y = -7\frac{1}{2}x + 312.5$

Review

$-\frac{55}{7} \quad (-7\frac{5}{7}x)$

$285 = (-7\frac{5}{7})(4) + b$

$285 = -31.324 + b$

$+31.324 \quad +31.324$

$316.324 = b$

$y = -7\frac{5}{7}x + 316.324$

$\frac{3}{7}$

Clappe

x	y
4	280
7	245
11	200

-45 -80

$\frac{-45}{4} \quad (-11\frac{1}{4}x)$

$200 = (-11\frac{1}{4})(11) + b$

$200 = -123.75 + b$

$+123.75 \quad +123.75$

$323.75 = b$

$y = -11\frac{1}{4}x + 323.75$

$-\frac{80}{7} \quad (-11\frac{3}{7}x)$

$280 = (-11\frac{3}{7})(4) + b$

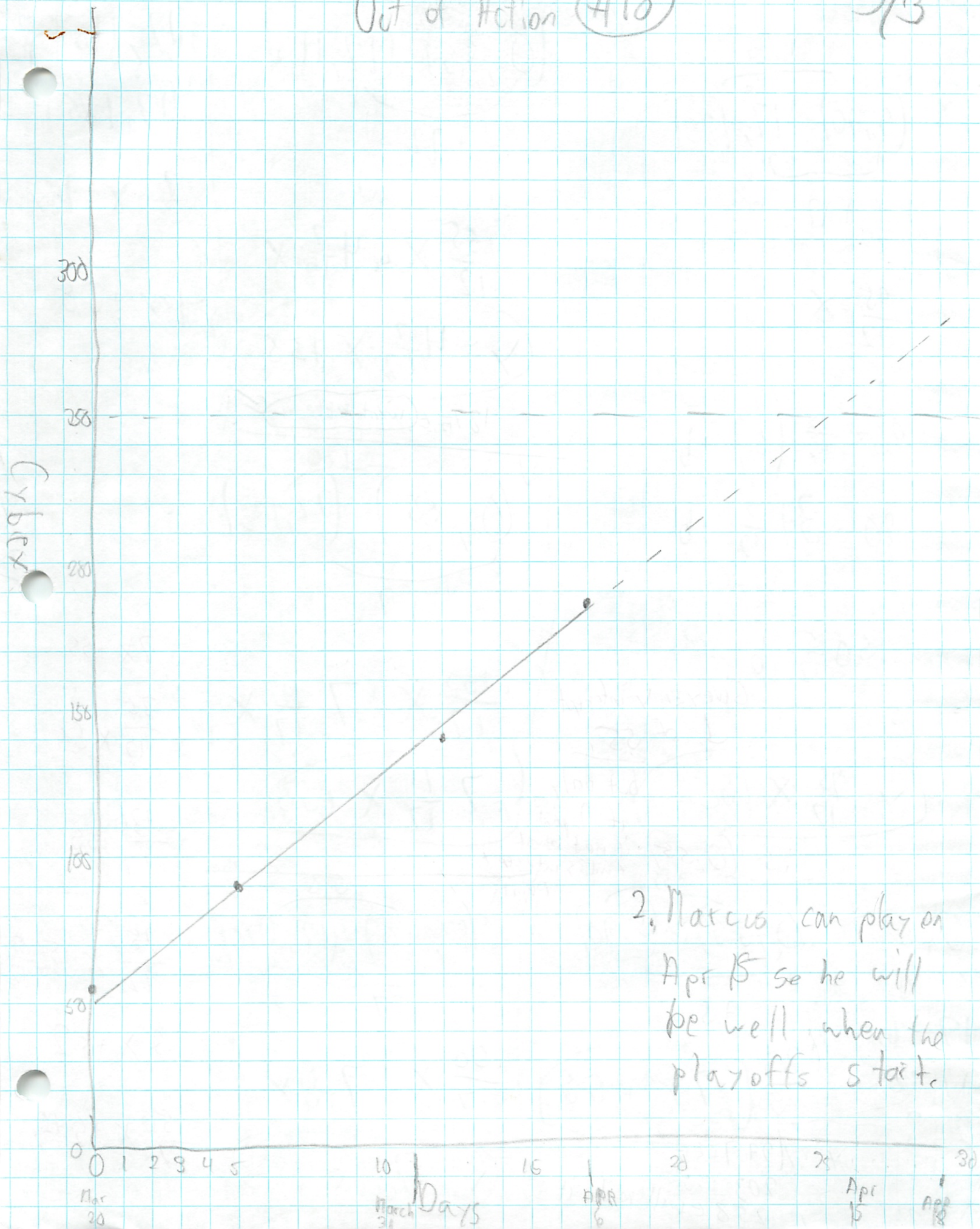
$280 = -57.857 + b$

$+57.857 \quad +57.857$

$337.875 = b$

$y = -11\frac{3}{7}x + 332.875$

Out of Action (478) 3/3



2, Marcus can play on Apr 15 so he will be well when the playoffs start.

+95

(5, 90) (17, 185)

+12

$\frac{95}{12}$ x

$90 = \frac{95}{12}(5) + b$

$90 = 39\frac{7}{12} + b$

$-39\frac{7}{12}$

$50\frac{5}{12} = b$

Give you y-intercept of 55

$y = \frac{95}{12}x + 50\frac{5}{12}$ but only if 1 point is (0, 55) - if not must find y-intercept + point

+35

(0, 55) (5, 90)

+5

$\frac{35}{5}(=7x + 55)$

$y = 7(29) + 55$

$y = 203 + 55$

$y = 258$ ← will make it

55

(0, 55) (12, 115)

+72

$\frac{55}{12}$ x or $4\frac{7}{12}$ x

$y = 4\frac{7}{12}x + 55$

$187\frac{11}{12}$ ← won't make it

130

(0, 55) (17, 185)

17

$\frac{130}{17}$ x $7\frac{11}{17}$ x

$y = 7\frac{11}{17}x + 55$

56

(5, 90) (12, 146)

7

$\frac{56}{7}$ x $7\frac{1}{4}$ x

$y = 7\frac{1}{4}x + 55$

(12, 146) 75

(17, 185)

$\frac{75}{5}$ x 15x

$y = 15x + 55$

$7x + 55$

$\frac{85}{12}$ x 55

$\frac{130}{17} + 55$

$\frac{95}{12}x + 50\frac{5}{12}$

$9x + 52$

$\frac{50}{7}x + 54\frac{2}{7}$

95 / 8 / 425

13 | 475

0 | 55

5 | 90

12 | 140

17 | 185

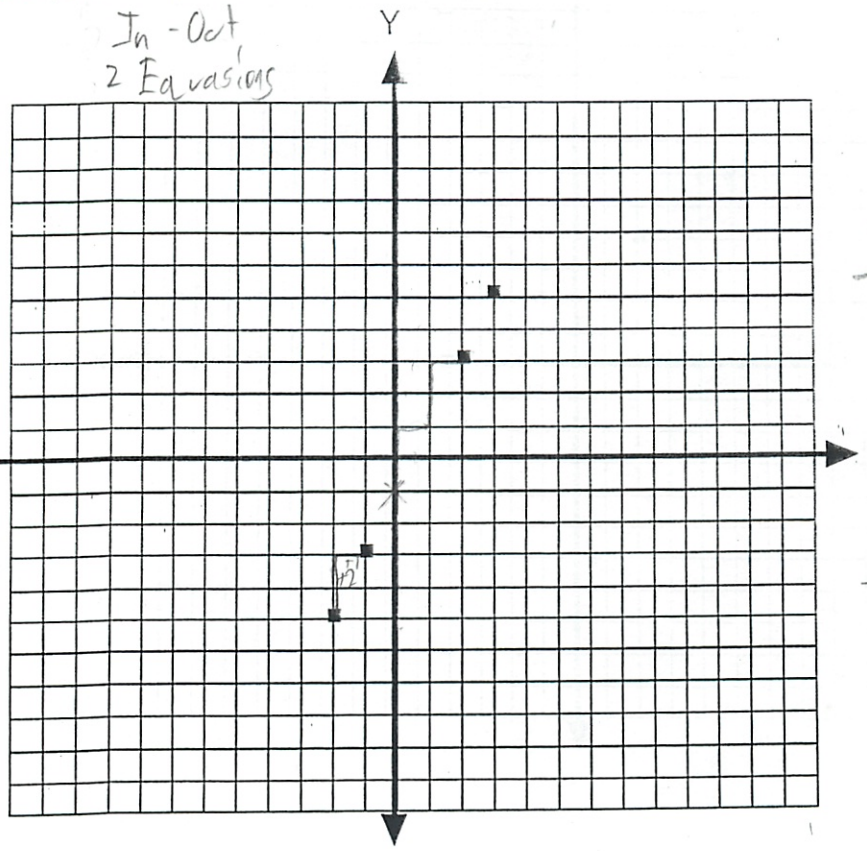
29 | ?

Name_____

Find the rule (equation) that represents each graph.

In - Out
2 Equations

1)



x (In)	y (Out)
-2	-5
-1	-3
0	-1
1	1
2	3
3	5

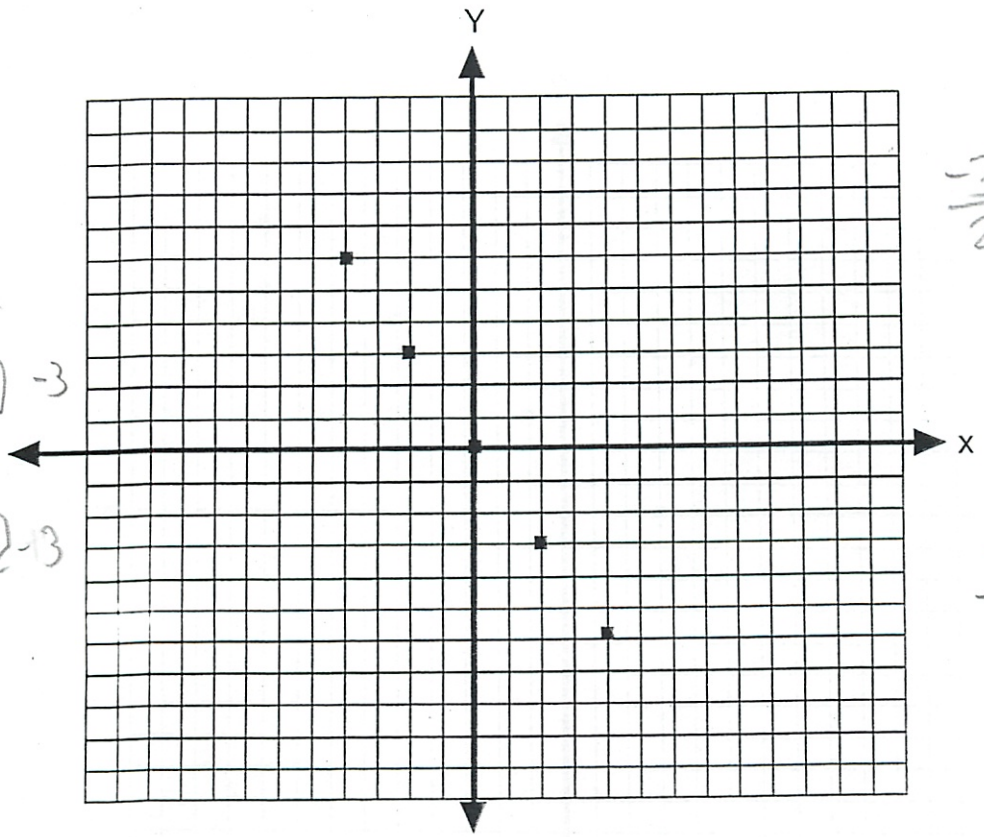
+1 +1 +2 +2

1	0

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

$\frac{2}{1}$ $y = 2x - 1$ ✓

2)



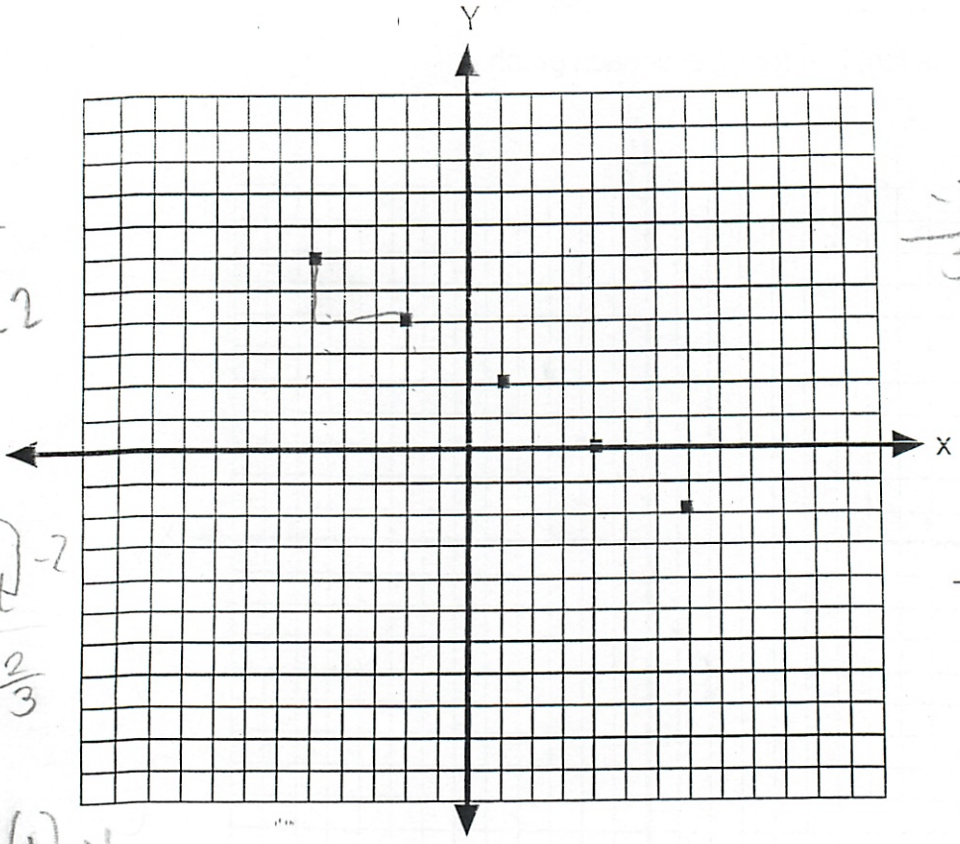
x	y
-4	6
-2	3
0	0
2	-3
4	-6

+2 +2 -3 -3

$\frac{-3}{2}$ $y = -1\frac{1}{2}x$ ✓

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

3)



X	Y
-5	6
-2	4
1	2
4	0
7	-2
0	$2\frac{2}{3}$

-2 / 3 $y = \frac{-2}{3}x + 2\frac{2}{3}$ ✓

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

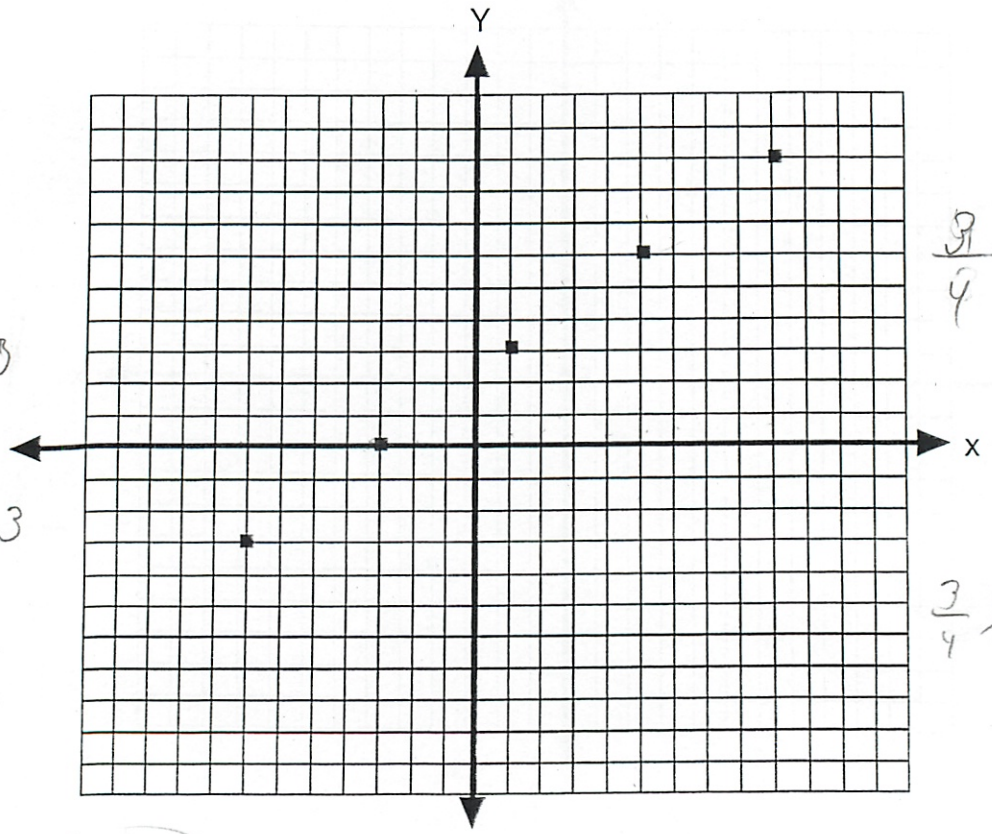
$2 = \left(\frac{-2}{3}\right)(1) + b$

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

$-\frac{2}{3}$ $+\frac{2}{3}$

$2\frac{2}{3} = b$

4)



X	Y
-7	-3
-3	0
1	3
5	6
9	9
0	$2\frac{1}{4}$

$\frac{3}{4}x$ $y = \frac{3}{4}x + 2\frac{1}{4}$

✓

$\frac{3}{4}x$ $y = \frac{3}{4}x + 2\frac{1}{4}$

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

$3 = \frac{3}{4} + b$

$-\frac{3}{4}$ $-3/4$

$2\frac{1}{4} = b$

Name Michael Plasmeier Line of Best Fit

Date 3/11/08

1) The winning Olympic Games discus throws from 1900 to 1988 are shown in the table. Draw the line of best fit and find the equation for your line. Let x represent the year, with x = 0 corresponding to 1900.

Report this as small fractions or decimals

$\hat{y} = \frac{7.2}{4}x + 104.8$

$155.2 = 28\left(\frac{7.2}{4}\right) + b$

$155.2 = 50.4 + b$

$-50.4 \quad -50.4$

$104.8 = b$

$\hat{y} = \frac{7.1}{8}x + 147.7$

$225.8 = 88\left(\frac{7.1}{8}\right) + b$

$225.8 = 78.1 + b$

$-78.1 \quad -78.1$

$147.7 = b$

Year	Winning Throw
1900	118.2 ft
1904	128.9 ft
1908	134.2 ft
1912	145.1 ft
1920	146.6 ft
1924	151.4 ft
1928	155.2 ft
1932	162.4 ft
1936	165.6 ft
1948	173.2 ft
1952	180.5 ft
1956	184.9 ft
1960	194.2 ft
1964	200.1 ft
1968	212.5 ft
1972	211.3 ft
1976	221.5 ft
1980	218.7 ft
1984	218.5 ft
1988	225.8 ft

Calc $\hat{y} = 1.2x + 123.32$

2) The data in the table contain the forearm lengths and foot lengths of 22 students in an algebra class. Draw the line of best fit and find the equation for your line.

$\hat{y} = 0x + 24$

$24 = 22(0) + b$

$24 = 0 + b$

$24 = b$

$\hat{y} = \frac{3}{4}x + b$

$24 = 24\left(\frac{3}{4}\right) + b$

$24 = 18 + b$

$-18 \quad -18$

$6 = b$

Forearm Length	Foot Length
22 cm	24 cm
20 cm	19 cm
24 cm	24 cm
21 cm	23 cm
25 cm	23 cm
18 cm	18 cm
20 cm	21 cm
23 cm	23 cm
24 cm	25 cm
20 cm	22 cm
19 cm	19 cm
25 cm	25 cm
23 cm	22 cm
22 cm	23 cm
24 cm	24 cm
20 cm	21 cm
18 cm	19 cm
24 cm	23 cm
24 cm	27 cm
21 cm	24 cm
22 cm	22 cm

Calc $\hat{y} = .65x + 7.67$

3) The total prize money for the Indianapolis 500 from 1980 to 1990 is shown in the table. Find the line of best fit and the equation for your line. Let x = 0 correspond to 1980. Use your equation to predict the total amount of prize money for the Indianapolis 500 in 2002.

Year	Prize Money
1980	$1,503,225
1981	$1,605,375
1982	$2,067,475
1983	$2,411,450
1984	$2,795,899
1985	$3,271,025
1986	$4,001,450
1987	$4,490,375
1988	$5,025,400
1989	$5,723,725
1990	$6,240,350

Ans 11,964,480

4) The average June temperatures and latitudes of several cities in the United States are shown in the table. Find an equation of the line that best fits the data. Use your equation to approximate the average June temperature for a city in the central United States with a latitude of 40 .

City	Lat.	Temp.
Bismarck	46.8°	64.3°F
Sioux Falls	43.5°	68.4°F
Omaha	41.2°	73.0°F
Kansas City	39.1°	76.1°F
Wichita	37.7°	73.6°F
Okla. City	35.5°	77.0°F
Dallas	33.2°	82.0°F
Houston	29.8°	80.6°F

Ans 72.7

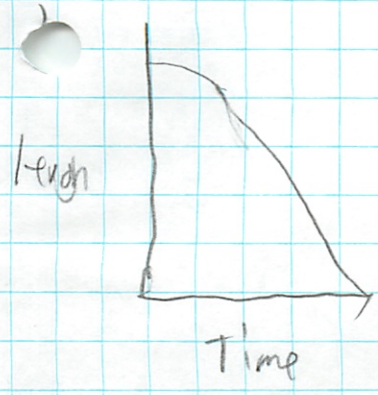
5) The number of Americans who were employed in nonmilitary jobs between 1982 and 1988 is shown in the table. Find an equation for the line of best fit. Use your equation to approximate the number of workers in 2002.

Year	Number of Workers
1982	99,526,000
1983	100,834,000
1984	105,005,000
1985	107,150,000
1986	109,597,000
1987	112,440,000
1988	114,968,000

Ans 152,681,785

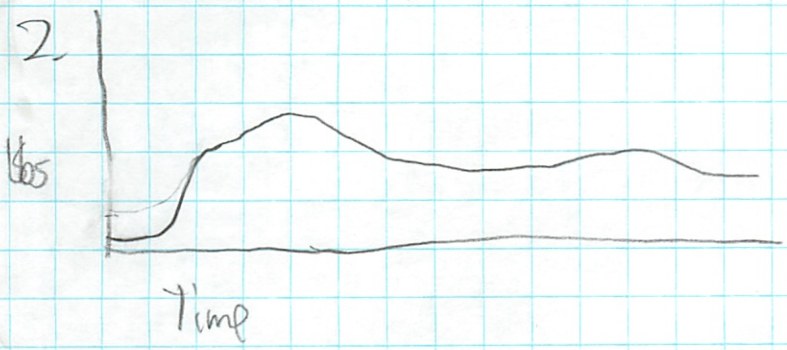
More Graph Sketches (4/20)

1.



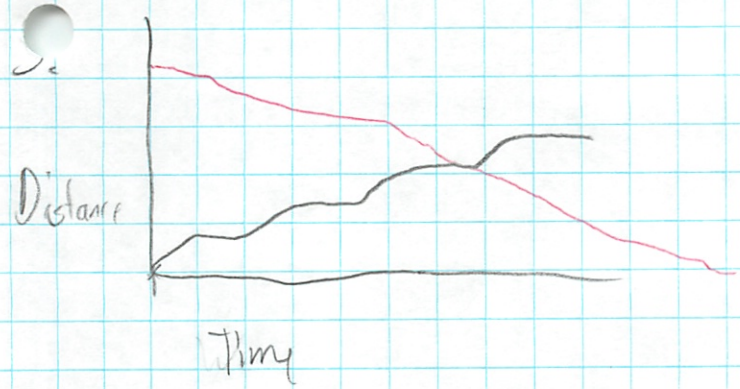
length of candel as it burns

2.



Wight of person over age

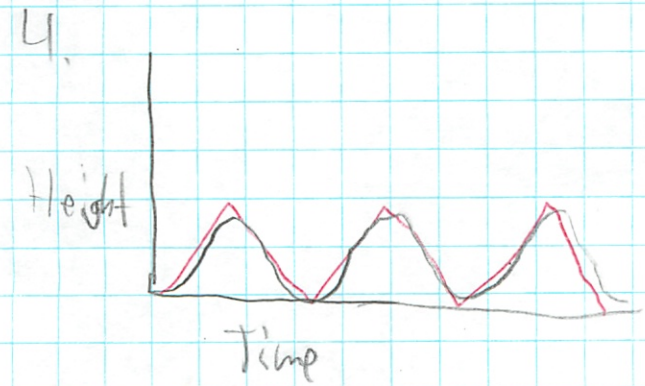
3.



distance to CA in time since leaving Westport

negitive slope

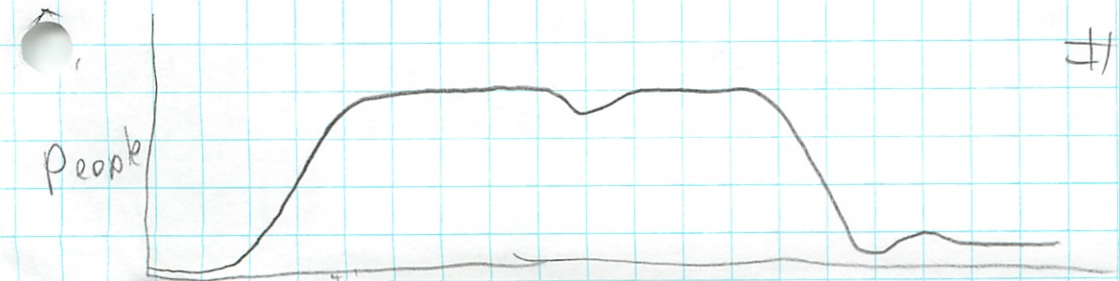
4.



Hight of chip on wheel

pointed tops

5.



# of people in a building

Calc Graph

3/7

1a $y = 12x$

b. $y = 12(20)$ 2nd Table set = 20
$y = 240$ 2nd Table

So y = beans
x = people

known
x

c $y = 155$ 2nd trace → Intercept
$\frac{155}{12} = \frac{12x}{12}$ $x = 12.91$
known
y
$12.9 = x$

2 $y = (x-4)/2$ y = $
x = wagons

b. 10.5 or $y = (x-4)/2$
(Table) $y = (25-4)/2$ known
$y = 21/2$ x
$y = 10.5$

Just use rule + put in what you know

c. 34 or $y = (x-4)/2$
$15 = (x-4)/2$
$\times 2 \quad \times 2$
(y intercept) $30 = x-4$ known
$+4 \quad +4$ y
$34 = x$

3.

Table x	Intercept y
1.31	-2.022
-3.02	50.35
.57	-1.04
none-	-2.12 ← No such point
1.06	-2.05
8.67	162.34

to tenth

U
crosses 2x
1.75
or 1.27

Fair Share on Chores

3/8

p263 Eli

1. ?

No = num of boys + girls

Boys 0 min Girls 120 min
Boys 40 min Girls 80 min
Boys 55 min Girls 65 min

	Y	X	can also do w/hours
B=0, G=300	0,5		
B=50, G=225	$\frac{5}{6}$, $3\frac{3}{4}$		
B 100 G=150	$\frac{5}{6}$, $2\frac{1}{2}$		
B 120	G 120	2, 2	
B 200	0	$3\frac{1}{3}$, 0	

2. $600 = 2(G) + 3(B)$

3. You would plug in G and solve equation

4. ?

G=X
B=Y

$B = 6/2$ ~~

$B = \frac{(10-2G)}{3}$ ~

$Y = \frac{(10-2x)}{3}$

I don't get what to do???

$600 = 2(30) + 3(B)$
$600 = 160 + 3(B)$
$-160 \quad -160$
$\frac{440}{3} = \frac{3(B)}{3}$
$146 = B$; what

$Y = -\frac{2}{3}x + \frac{10}{3}$

↗ slope intercept form

Boys

Girls

Put points in Stat Editor or graph line + use table

$2x + 3y = 10$ ← standard form
$-2x \quad -2x$ ← isolate variables
$\frac{3y}{3} = \frac{10-2x}{3}$
$y = \frac{10-2x}{3}$ distribute
$y = -\frac{2}{3}x + \frac{10}{3}$

More Fair Share
Chores

3/10

(y) Boys work $\frac{1}{2}$ hr longer than (x) Girls

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

Rule

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

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

#2 Use both equations to find intersection

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

$y = (2/3)x + \frac{10}{3}$

1.7 x 2.2 y

Each: Girls 1.7 hrs, Boy 2.2 hrs

$x + \frac{1}{2} = -\frac{2}{3}x + \frac{10}{3}$

$+\frac{2}{3}x \quad +\frac{2}{3}x$

$1\frac{2}{3}x + \frac{1}{2} = \frac{10}{3}$

$\times 2 \quad \times 2$

To Find by Hand

$1\frac{2}{3}x = \frac{20}{3}$

$\frac{5}{3} \quad \frac{5}{3}$

Fair Share #22
for Hired Hands

3/18

Inexp x	Exp y
2	$3\frac{1}{2}$
1	$4\frac{1}{4}$
0	5
3	2.75
4	2

$20
3 Inexp
4 Exp

← But exp must be paid more

$20 = 3x + 4y$ ← Standard Equation

$-3x$

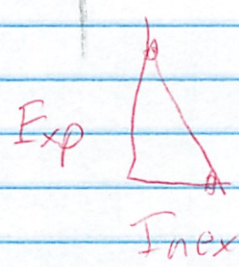
$\frac{20-3x}{4} = \frac{4y}{4}$

$\frac{20-3x}{4} = y$

$y = \frac{-3}{4}x + \frac{20}{4}$ ← slope intercept form

Solve y in terms of x

Type in calc + use table



More Fair Share Hands #23

3/10

1. $y = x + 1$ - slope

x	y
4	5
2	3
2.5	3.5

$y - x = 1$ - standard

Intersection of 2 lines:

2.28x 3.28y

Intersection by hand

2. $30 = 3x + 4x$

$-3x \quad -3x$

$\frac{4y}{4} = \frac{30 - 3x}{4}$

$y = \frac{30 - 3x}{4}$

$y = -\frac{3}{4}x + \frac{30}{4}$ - y intercept

x	y
1	6.75
3	5.25
6	3

Intersection by Hand

$-\frac{3}{4}x + \frac{30}{4} = x + 1$

$+\frac{3}{4}x \quad +\frac{3}{4}x$

$\frac{30}{4} = 1\frac{3}{4}x + 1$

$-1 \quad -1$

$\frac{26}{4} = \frac{7}{4}x$

$\left(\frac{4}{7}\right) \quad \left(\frac{4}{7}\right)$

$3\frac{5}{7} = \frac{26}{7} = x$

Intersection

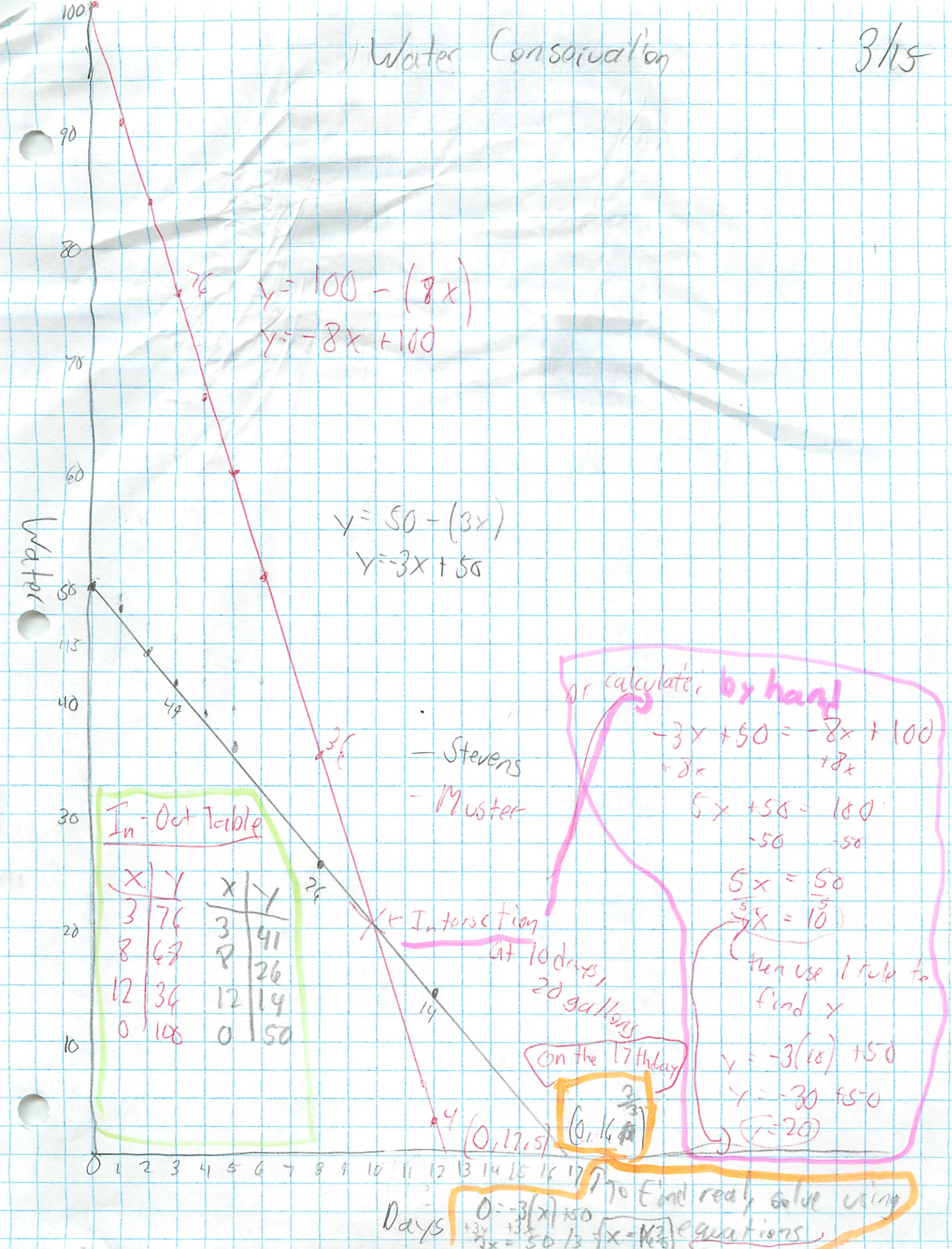
3.71 x

7.71 x

Then use $y = x + 1$ to find y

Water Consavation

3/15



Catching Up

3/17

#1 Roll 6.
add 2 days
leave on 8th day to make to Sep 12

They travel 180 miles total
We have 4 days for that

* we need to go 45 mph per day

#2 Roll 1+4 = (5)
We wait 5 hours
They take 40 hours to get to Reno
~~They [illegible] 8 hrs [illegible]~~

You need 35 hrs. to go 80 miles
~~[illegible] 80 miles [illegible] 35 mph~~
80/35 = 2.285 → (2.3)
miles per hours

#3 Roll (8)
We wait 7 hrs
They still take 40 hrs

You need 33 hrs to go 80 miles
80/33 = 2.42 → (2.4)
miles per hr.

Catching up Auburn #27

3/18

1. Rolled 17 miles per day
   It will take them 8 days
   ←——— =2
   You have 6 days to go 140 miles
   you must go $23\frac{1}{3}$ miles per day

2. Rolled 15
   $140/15 = 9\frac{1}{3}$ days it takes them
   ↓ ×2
   Process → total miles
   You have $7\frac{1}{3}$ days to go 140 miles
   $140/7\frac{1}{3} = 19.09$
   ↓
   You must go 19.09 miles per day

3. Rolled 15
   They take $11\frac{2}{3}$
   You have $9\frac{2}{3}$

   You must go 14.48 miles per day

In	Out	
12	23.33	
15	19.09	−4.61
×2 ↓ 17	14.48	

$y = 2.3x - 15.485$

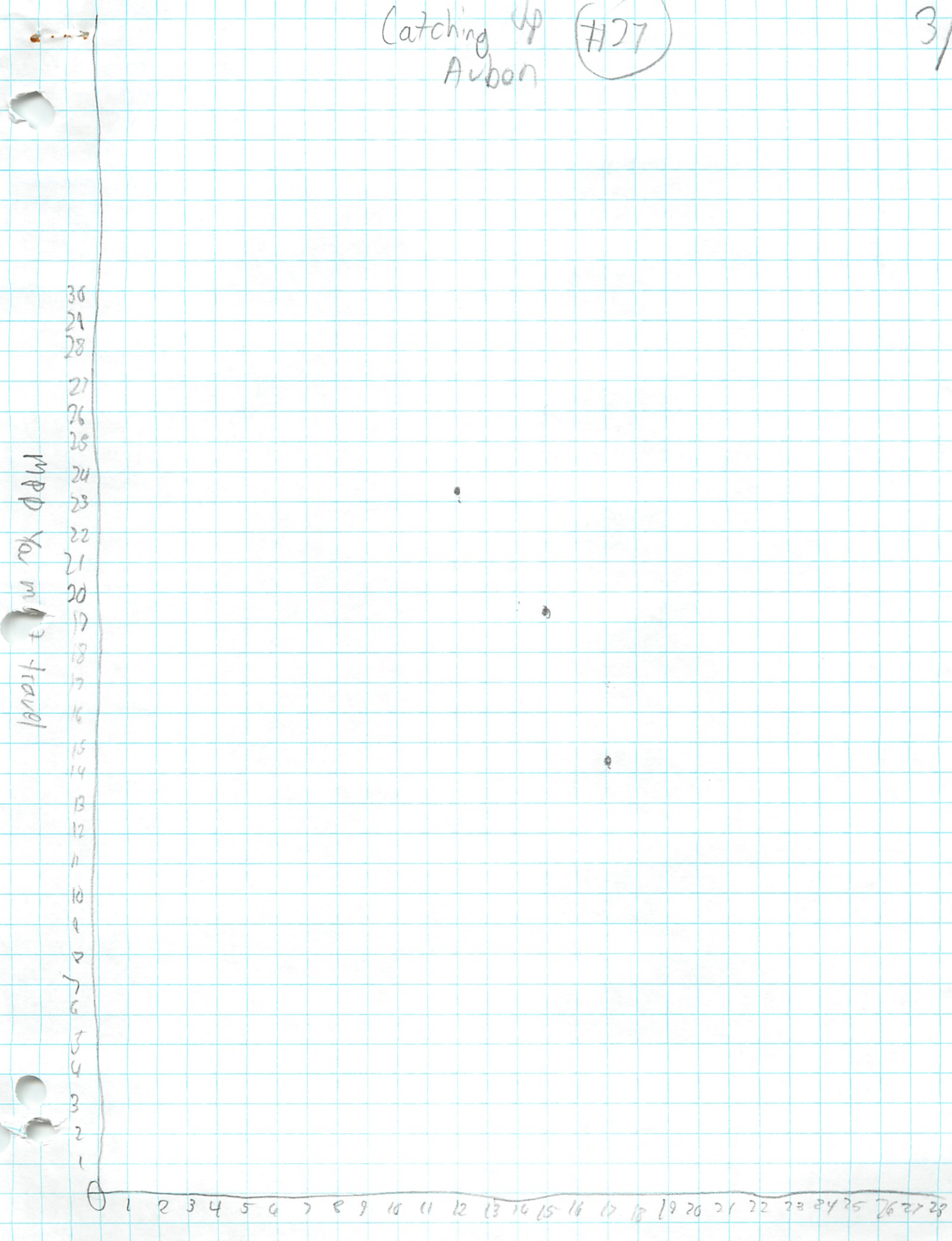
One possibility - are more

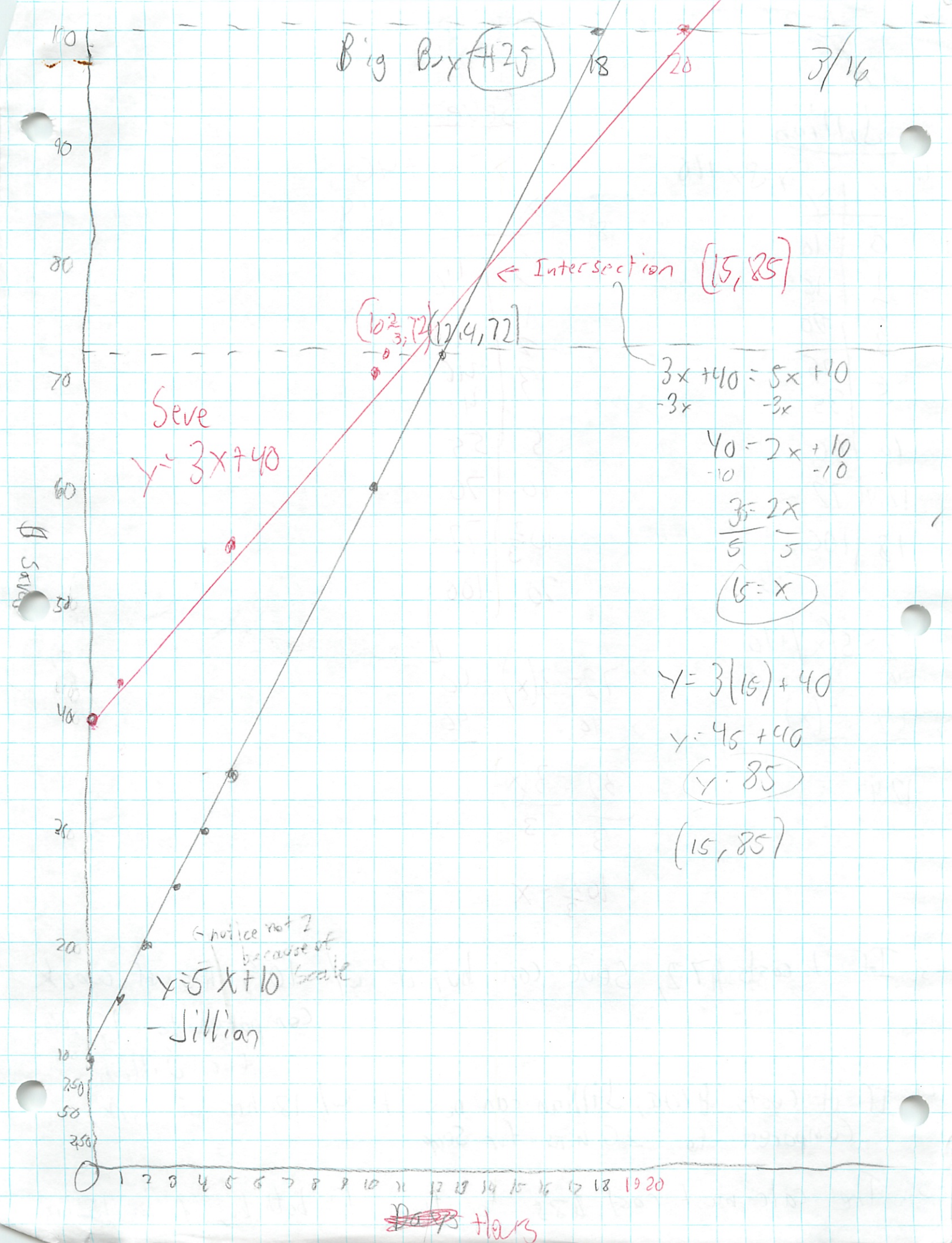
$19.09 = 15(2.3) + b$
$19.09 = 34.575 + b$
$-34.575 \quad -34.575$
$-15.485 = b$

s	
1.	6
2.	7.33
3.	9.66

Catching up (#27)
Aubon

3/12





$3x + 40 = 5x + 10$

$-3x \quad -3x$

$40 = 2x + 10$

$-10 \quad -10$

$\frac{30}{5} = \frac{2x}{5}$

$15 = x$

$y = 3(15) + 40$

$y = 45 + 40$

$y = 85$

$(15, 85)$

Jillian

1. $y = 5x + 10$

x	y
0	10
1	15
2	20
3	25
5	35
10	60
12.4	72
18	106

$72 = 5(x) + 10$

$-10 \quad -10$

$\frac{62}{5} = \frac{5(x)}{5}$

$12.4 = x$

Seve

$y = 3x + 40$

x	y
0	40
1	43
2	46
3	49
5	55
10	70
$10\frac{2}{3}$	72
20	108

$72 = 3(x) + 40$

$-40 \quad -40$

$\frac{32}{3} = \frac{3(x)}{3}$

$10\frac{2}{3} = x$

3. If it costs $72, Seve can buy it w/ $10\frac{2}{3}$ hrs of work compared to 12.4 for Jillian

4. If it costs $100, Jillian can buy it w/ 18 hrs of work, Compared to 20 hrs for Seve

5. The calc must cost $85 for them to both buy it in 15 hrs

Michael Plasmeier

4) The table below shows the weight and wing area of several types of birds. The data shows the wing area of a bird depends on the weight of the bird.

Bird	Weight (x)	Wing Area (y)
Sparrow	25 g	87 cm^2
Martin	47 g	186 cm^2
Blackbird	78 g	245 cm^2
Sterling	93 g	190 cm^2
Dove	143 g	357 cm^2
Crow	607 g	1344 cm^2

a) Find the rule (equation) of the line of best fit.

$y = 2.13 + 48.89$

b) What would be the approximate wing area of a Blue Heron whose weight is 2090 grams?

4501.925 g

Getting Gold

3/18

pan
$60 expence

Days	Profit
0	-60 ← y-intercept (intial expence)
1	-45
2	-30
3	-15
4	0
5	15
6	36
16	180
30	390

+1 (2 → 3: -30 → -15, -15)

Profit per day: 15/1 x

$y = 15x - 60$

trough
$420 expence

Days	Profit
0	-420
1	-390
2	-360
3	-330
4	-300
5	-270
16	60
30	480
14	0

$y = 30x - 420$

$0 = 30(x) - 420$
$+420 \quad +420$
$\frac{420}{30} = \frac{30(x)}{30}$
$14 = x$

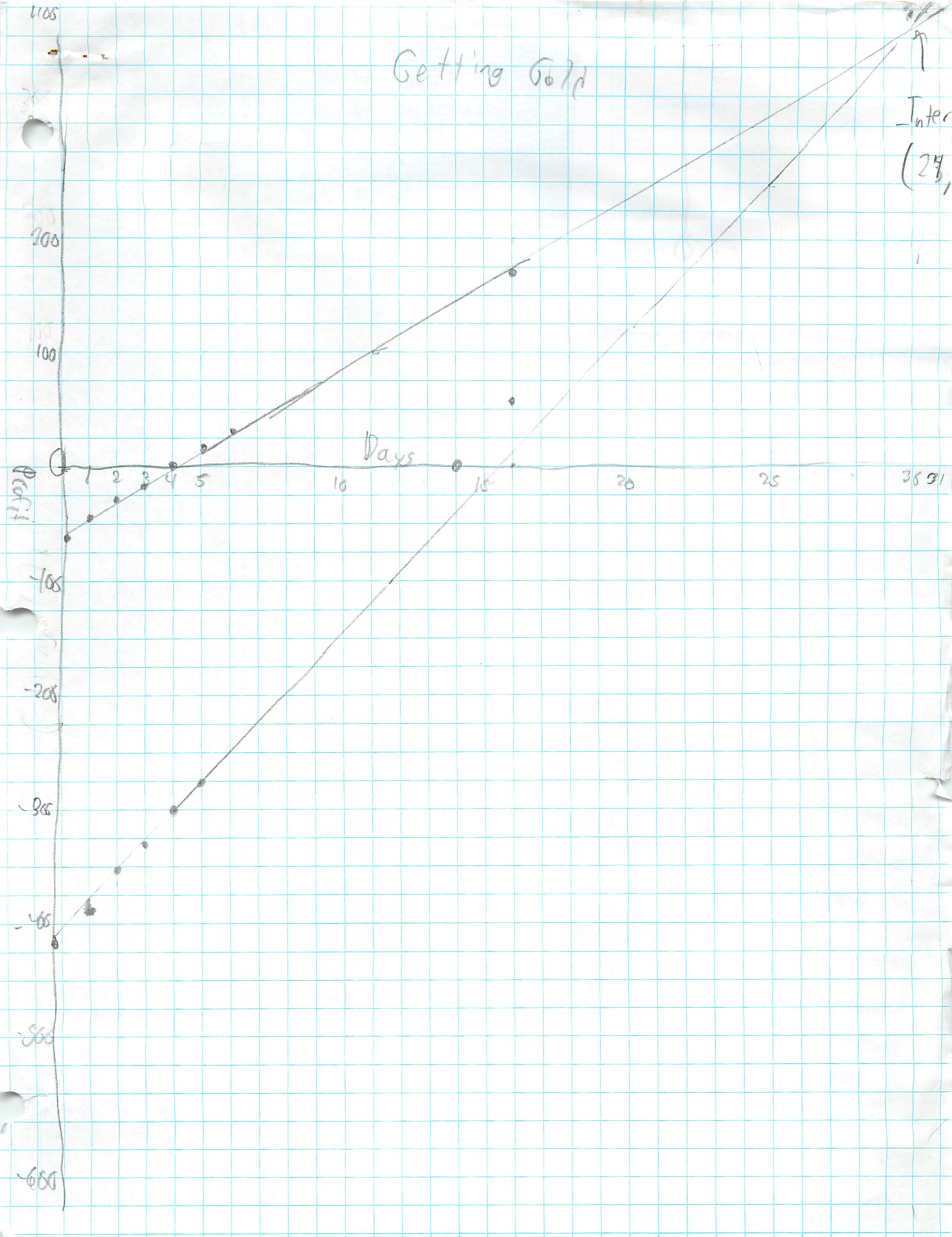
Intersection

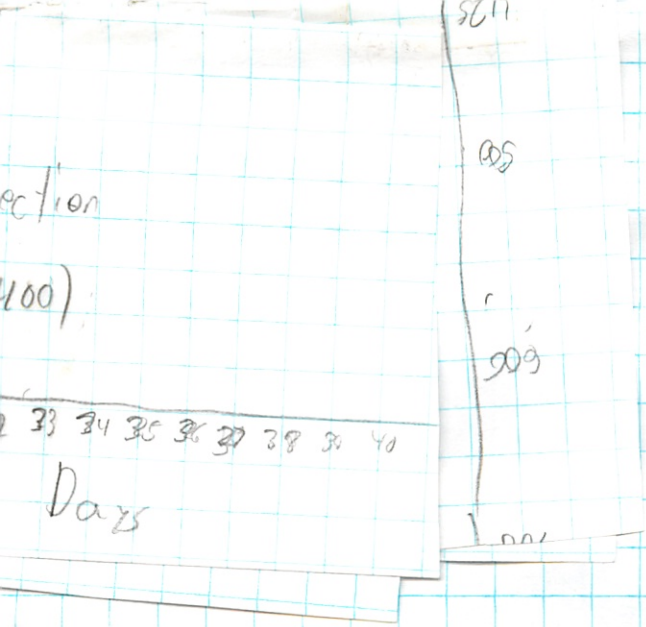
$15x - 60 = 30x - 420$
$-15x \quad -15x$
$-60 = 15x - 420$
$+420 \quad +420$
$\frac{360}{15} = \frac{15x}{15}$
$24 = x$

420 − 60 = 360

$y = 15(24) - 60$
$y = 360 - 60$
$y = 300$

$(24, 300)$


Getting Gold
Days
Profit
100
-100
-200
-300
-400
-500
-600
1
2
3
4
5
10
15
20
25
35
31


ection
400)
33 34 35 36 37 38 39 40
Days

Take-Home Assessment for *The Overland Trail*

As in the *In-Class Assessment for "The Overland Trail,"* the questions below have to do with a modern-day move.

Your family is traveling on superhighways with a large rental truck and a van.

1. Fuel Economies

Each time one of the vehicles stops for gas, you make a note of how much gas the vehicle has used and how many miles it has traveled.

a. Using the data in the tables below, draw two graphs *on the same set of axes* comparing total miles traveled to total gallons of gas used for each vehicle.

Van	
Total amount of gas used so far	Total number of miles traveled so far
18	400
28	700
42	990
52	1250

Truck	
Total amount of gas used so far	Total number of miles traveled so far
36	300
65	600
100	850
138	1100

b. Reading from the graph, estimate how many gallons of gas the truck had guzzled by the time you traveled 800 miles. And how about the van?

c. Estimate how many miles each vehicle can travel on a gallon of gas.

Continued on next page

Homework: Complete *Take-Home Assessment for "The Overland Trail"*

Students should bring the completed assessment to class tomorrow. As with all work done at home, students may collaborate or get assistance, but they should report this fact in their write-up of the assessment.

2. Van Repairs

One morning, as you attempt to get started, you find that the van won't start. The garage mechanic says that the fuel pump needs replacement and that the work can be done fairly quickly, in about two hours.

The family decides that Mom and you should head out in the truck towards that night's stop, 400 miles down the highway. Dad and the rest of the family will remain behind and either catch up with you during the day or meet you tonight at the motel where you have reservations.

a. Suppose that the truck travels at 45 miles per hour, that the van goes at 55 miles per hour (once it is fixed), and that the repair actually takes two hours. For the sake of simplicity, assume that neither vehicle makes any stops along the way.

   i. Which vehicle will get to the motel first?

   ii. How far from the motel will the other vehicle be when the first vehicle reaches the motel?

b. Of course, the repair might not take the full two hours, or it might take longer. So now consider the case where the repair actually takes four hours. (In this case, the truck definitely arrives first.)

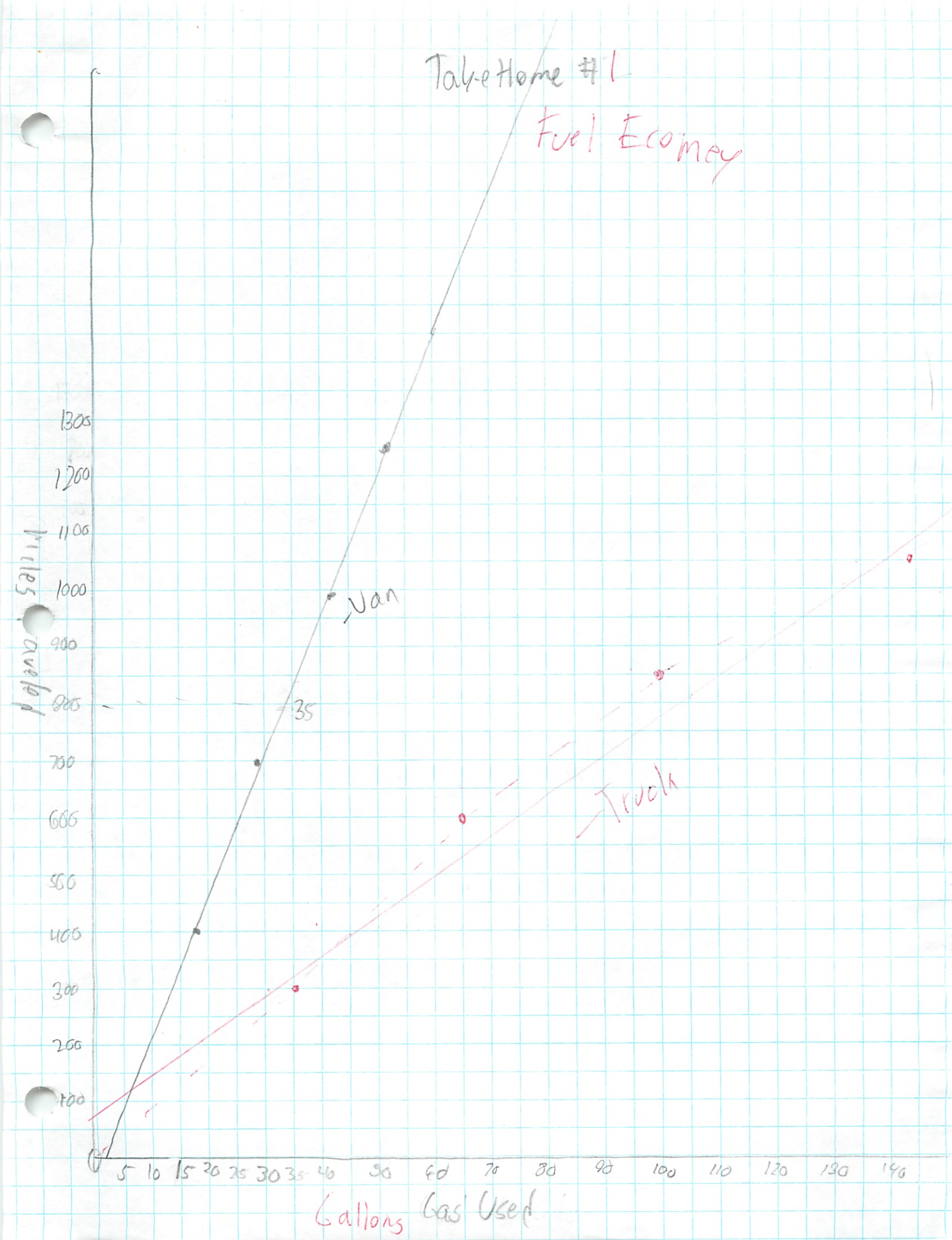
   How far from the motel will the van be when the truck reaches the motel?

c. Now generalize from parts a and b. Suppose that h represents the number of hours of delay for the van. (Assume that h is a number large enough to allow the truck to arrive first.)

   Develop a formula or equation in terms of h that says how far the van will be from the motel when the truck arrives at the motel.

Take-e Home #1

Fuel Economy



Take Home
#2 Var Replies 3/18

1. They need 8.88 hrs

We ~~have~~ could go 7 but add 2 for

9.27 it takes us
They get there 1st
and we (van) are .39 hrs behind

2. They need 8.88
we take 7 but add 4

we take 11.27 and arrive 2.39 hrs latter

In	Out
2	9.27
4	11.27

+2 +2

$9.27 = 2(1) + b$
$9.27 = 2 + b$
$-2 \quad -2$
$7.27 = b$

$y = x + 7.27$

3.

In (b)	Out
2	.39
4	2.39

+2 +2

$.39 = 2(1) + b$
$.39 = 2 + b$
$-2 \quad -2$
$-1.61 = b$

$y = b - 1.61$

I did hours

Distance on back

b = time in garage
y = distance van is from hotel

b = hours of delay

x	y
2	21.45
3	26.45
4	31.45

+1 +55

$y = \frac{55}{1}x - 88.55$

$131.45 = 55(4) - 88.55$

$131.45 = 220 - 88.55$

$131.45 = 131.45$

$21.45 = 2(55) + b$

$21.45 = 110 + b$

$-110 \quad -110$

$-88.55 = b$

$21.45 = 55(2) + b$

$21.45 = 110 + b$

$-110 \quad -110$

$-88.55 = b$

Van Repares Redo

3/18

1. Van $y = 55x - 110$ Trucks $y = 45x$

x = time

Speed mph — distance delayed (55×2)

Van

Truck

2. $400 = 55x - 110$ $\quad 400 = 45x$

$+110 \quad +110$ $\quad \frac{400}{45} = \frac{45x}{45}$

hiles needed $\frac{510}{55} = \frac{55x}{55}$ $\quad 8\frac{8}{9} = x$

$9.3 = x$

hrs it takes to get to hotel

i. $21.1 = \left(9.3 - 8\frac{8}{9}\right) \times 55$

hrs difference → in miles

b. $y = 55x - 220$

$400 = 55x - 220$

$+220 \quad +220$

$\frac{620}{55} = \frac{55x}{55}$

$11.27 \longrightarrow \left(11.27 - 8\frac{8}{9}\right) \times 55 = 228.73$ miles behind

c. $55\left(8\frac{8}{9}\right) = 55h$

Our in-out table is close