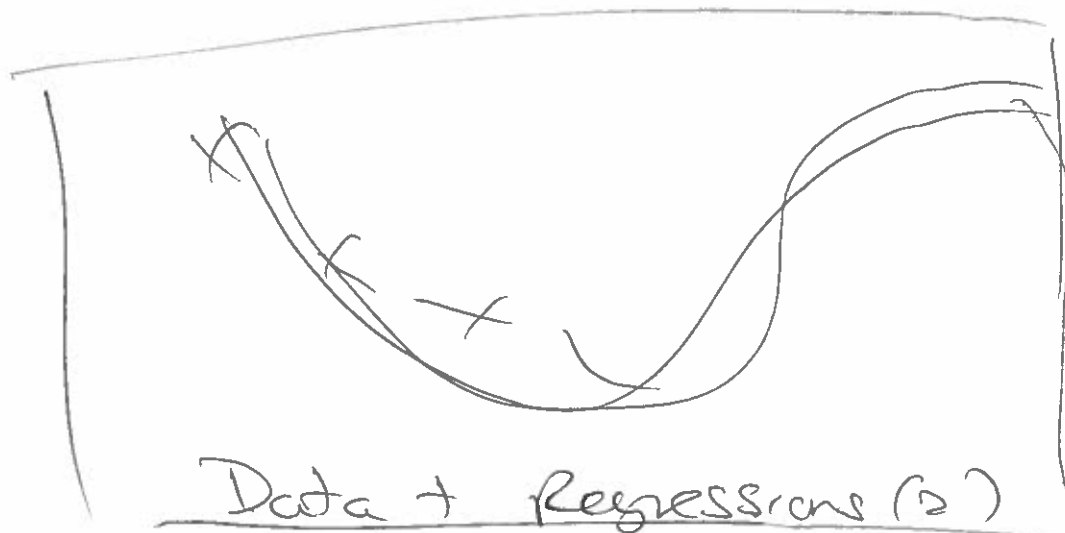
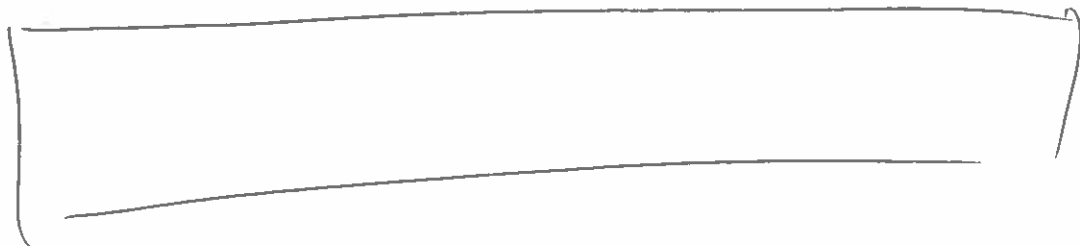
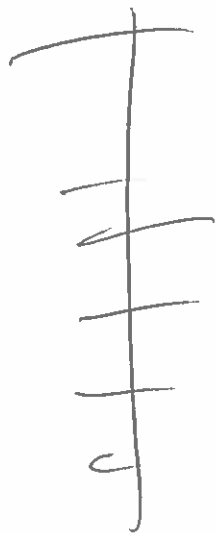


Calculus Poster

Date

Intro



Data + Regressions (2)

Predictions

Limit

End Behavior
or

$\lim_{x \rightarrow a} f(x) = \#$
prediction

Deriv.

Rate of
Change
or
Max/Min

Integral

Total
Amount
or

Ave. Value.

CONCLUSION:

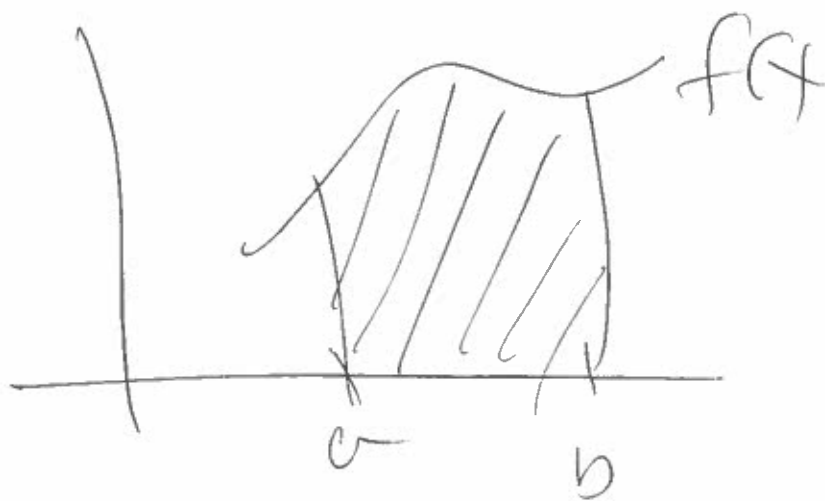
Definite Integral

ISI
M

$$\int_a^b f(x) dx = \#$$

\equiv Area under $f(x)$

between a & b





$$\int_{-2}^2 \sqrt{4-x^2} dx = 2\pi$$

~~$r(x)$~~ ~~Δx~~ ~~infe.~~

$\frac{1}{2}$ Circle of radius

$$A = \frac{\pi r^2}{2} = \frac{4\pi}{2}$$

$$= 2\pi$$

$n=2$ rectangles

Left Side

$$A \approx 4 + 3 = 7$$

$$f(0) + f(1)$$

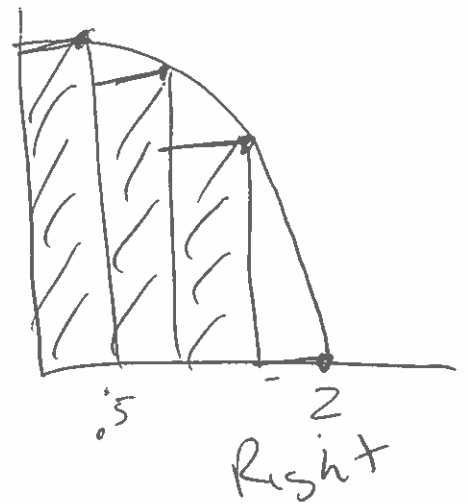
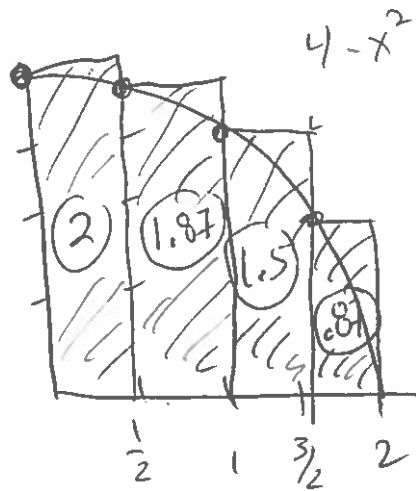
$n=2$ rectangles

Right Side

$$A \approx 3 + 0 = 3$$

$$f(1) + f(2)$$

$n=4$



$$\frac{1}{2} \left[f(0) + f\left(\frac{1}{2}\right) + f(1) + f\left(\frac{3}{2}\right) \right]$$

$$4 \cdot \frac{1}{2} + 3.75 \cdot \frac{1}{2} + 3 \cdot \frac{1}{2} + \frac{7}{4} \cdot \frac{1}{2}$$

Sum = LIST () Math 5: Sum SEQ = LIST () 5: Seq

LEFT

$$\text{sum} \left(\text{seq} \left(\frac{4-x^2}{\text{Function}}, \frac{x}{x}, \frac{0}{\text{Lower}}, \frac{3/2}{\text{Upper}}, \frac{.5}{\Delta x} \right) \right) * .5 = 6.25$$

RIGHT

$$\text{sum} \left(\text{seq} \left(4-x^2, x, .5, 2, .5 \right) \right) * .5 = 4.25$$

change in "x"

$$n = \underline{500}$$

$$\Delta x = \frac{b-a}{n} = \frac{2-0}{500} = .004$$

$$A \approx 5.34$$

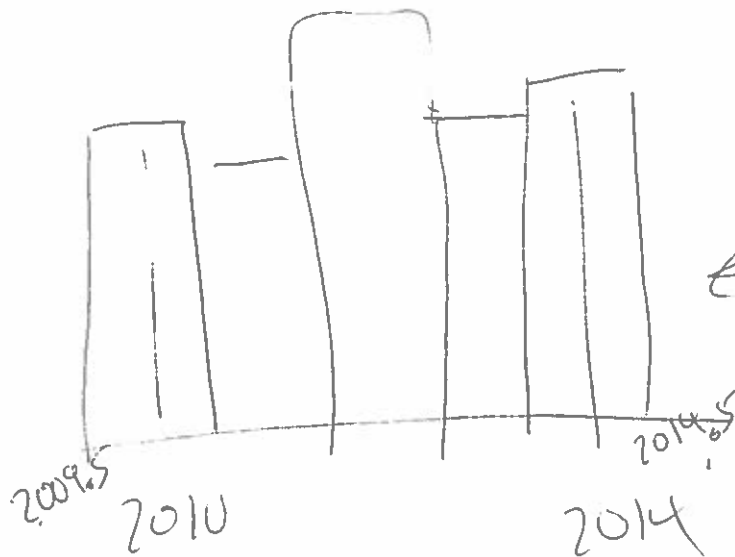
$$\text{Last} = 2 - .004 = 1.996$$

For

$$\begin{array}{cc} 2009 & - & 2013 \\ a & & b \end{array}$$

$$\Delta x = \frac{b-a}{n} = \frac{2013-2009}{9} = \frac{4}{9}$$

$$\text{Last } 2013 - 4/9$$



5
rectangles

GROUP NAME: Money Makers

Date: 4/9/14

Student Names (First and Last)

Speaker/Presenter: MONICA

Writer/Prep: Edna

Independent Variable (x-axis): Year (time)

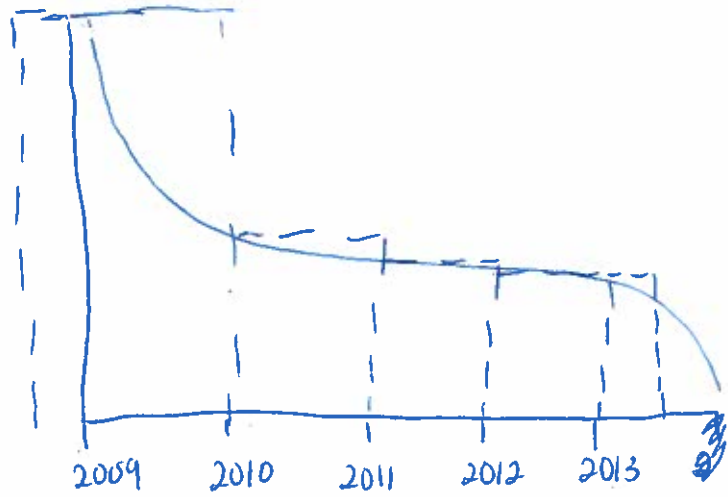
Leader/Collaborator: BRIANNA

Dependant Variable (y-axis): rate percentage

Conclusion (in words):
 The average crime rate ~~decreases~~ ^{is increasing} by .6725

Supporting Work:

x	y
2009	.75
2010	.52
2011	.59
2012	.44
2013	.39



SUM → LIST → MATH 5

seq → LIST → 5

~~Sum(seq(.016x³ + .56x² - 6.293x + 24.168, x, 09, 13, 4)) * 4 / 5~~

~~= 2.69 or 2.54~~

9, 9⁴/₅, 10³/₅, 10⁴/₅, 12, 12⁴/₅

Exact 2.12

Sum(seq(.016x³ + .56x² - 6.293x + 24.168, x, 09, 13, 1)) / 4 = .6725

GROUP NAME: Cha-Ching

Date: 04/09/14

Student Names (First and Last) Trey Murrill

Speaker/Presenter: Vinnie Avhad

Independent Variable (x-axis): Years

Writer/Prep: Sheila Mae Gan

Dependant Variable (y-axis): Revenue

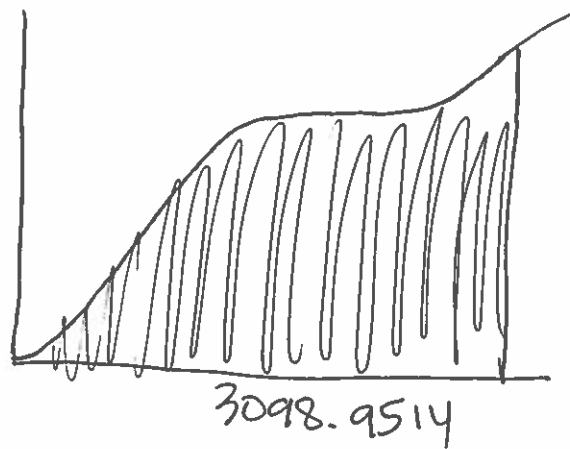
Leader/Collaborator: Tatiana Calderon

Conclusion (in words): In the years 2005 - 2013 ~~(walmart)~~ walmart made ~~3098.9514~~ \$3,098,951,400.

Supporting Work:

L1	L2
5	280
6	320
7	340
8	375
9	410
10	411
11	425
12	445
13	470

$$\text{sum}(\text{seq}(y, x, 5, 13 - .02, .02)) * .02 = 3097.063054$$



$$\Delta x = .02 = \frac{b - a}{n} = \frac{13 - 5}{n}$$

$$.02 = \frac{8}{n}$$

$$n = \frac{8}{.02} = 400 \text{ rectangles}$$

GROUP NAME: Functional Paradigm

Student Names (First and Last)

Date: 04/09/14

Speaker/Presenter: _____

Independent Variable (x-axis): time (hours)

Writer/Prep: Karol ZarSKI

Dependant Variable (y-axis): memory usage (MB)

Leader/Collaborator: Nader Shenouda

Conclusion (in words): The total memory used is 7457.001 MB however the average ~~data~~ memory usage per hour is 1864.25 MB/hour

Supporting Work:

Quartic Reg

x	y
0	1000
1	1500
2	2500
3	2250
4	2600

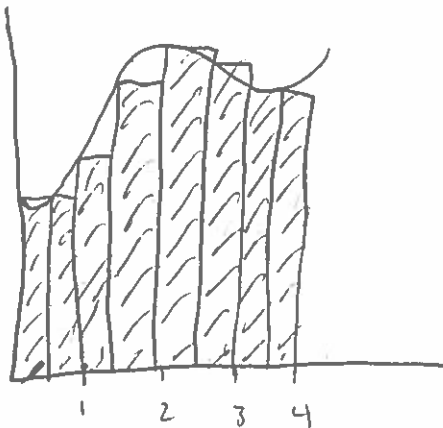
$Y_1 = \text{Quartic Reg}$

$$\text{sum}(\text{seq}(Y_1, x, 0, 3, .5, .5)) \cdot .5 =$$

$$= 7457.0019437$$

$n = 8$ $A \approx 7457.001437$
 $\Delta x = .5$

Actual # = 7785.6673



GROUP NAME: <u>Polarz Bearz</u>	Student Names (First and Last)
Date: _____	Speaker/Presenter: <u>Kausalya Menon</u>
Independent Variable (x-axis): <u>Year</u>	Writer/Prep: <u>Fredrick</u>
Dependant Variable (y-axis): <u>deaths in millions</u>	Leader/Collaborator: _____

Conclusion (in words):

Total # of deaths 9.4226

Supporting Work:

x	y
2009	2.1
2010	2.3
2011	2.6
2012	2.4
2013	2.7

$y_1 = \text{cubic reg}$

2nd List: $\text{math } 5^{\circ}, \text{ seq} = \text{List} \oplus 5 : \text{seq}$

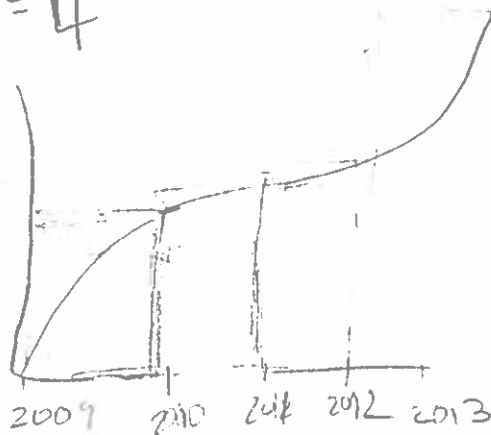
$\text{Sum}(\text{seq}(\text{function}, \frac{x}{x}, \text{lower}, \text{upper}, \Delta x)) * \Delta x$

$$\Delta x = \frac{b-a}{n}$$

$$n = 4$$

$$\Delta x = \frac{2013 - 2009}{4}$$

a, b
2009, last year 2013



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

$$\text{Sum}(\text{seq}(\text{cubic reg}, x, 2009, 2013-1, 1)) * 1$$

$$\rightarrow 9.42266$$

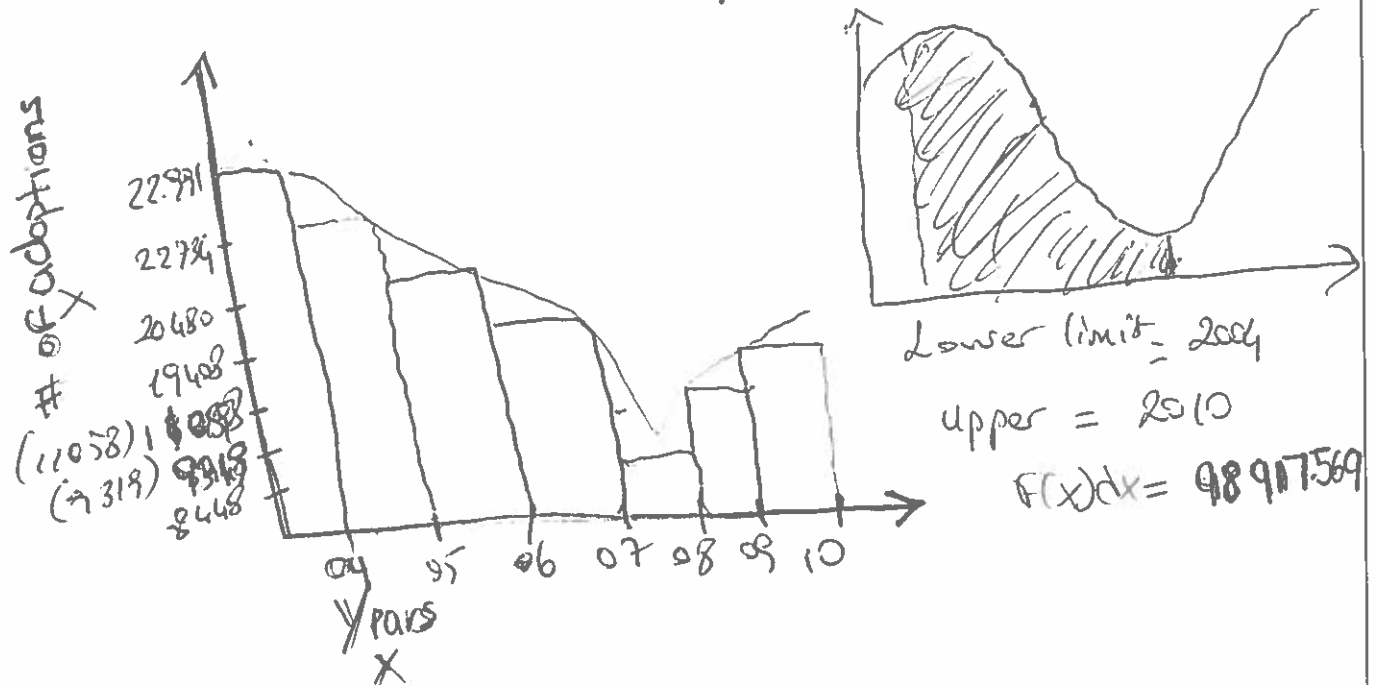
<p>GROUP NAME: <u>We mean Business</u></p> <p>Date: <u>4/9/14</u></p>	<p>Student Names (First and Last)</p> <p>Speaker/Presenter: <u>Christina Trujillo</u></p> <p>Writer/Prep: <u>Onur Turkan</u></p> <p>Leader/Collaborator: <u>Yasmin Silverio</u></p>
<p>Independent Variable (x-axis): <u>YEARS</u></p> <p>Dependant Variable (y-axis): <u># of adoptions in the US</u></p>	
<p>Conclusion (in words): <u>Adoptions are decreasing then increasing</u></p>	

Supporting Work:

Years	# of Adoptions in US
2004	22,991
2005	22,734
2006	20,480
2007	19,608
2008	8,448
2009	9,319
2010	11,058

$$\frac{b-a}{n} = \frac{2010-2004}{7} = \frac{6}{7}$$

$$\left(\text{Sum}(\text{Seq}(y_i, x_i, 2004, 2010 - \frac{6}{7}, \frac{6}{7})) \right) \times \frac{6}{7} = 104873.4857$$



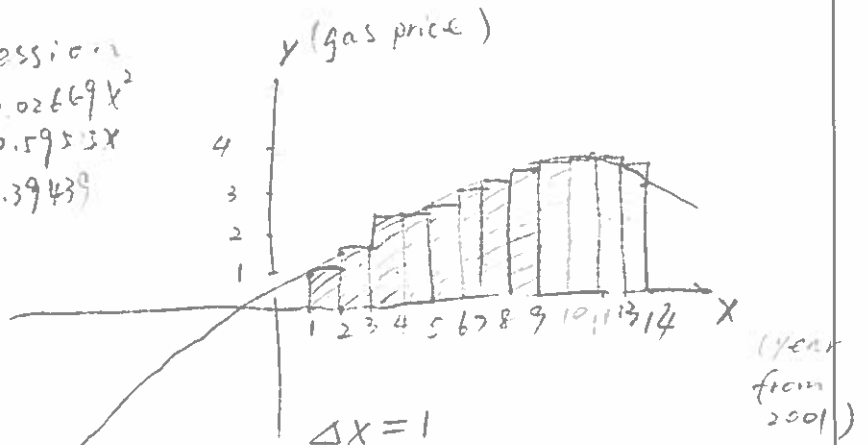
GROUP NAME: Date: <u>4/9</u> <u>Illuminatti</u>	Student Names (First and Last) Speaker/Presenter: <u>Ryan Piotrowski</u> Writer/Prep: <u>Danyan Zhou</u> Leader/Collaborator: _____
Independant Variable (x-axis): _____ Dependant Variable (y-axis): _____	

Conclusion (in words):
 The average ^{gas} price between 2001 + 2014 is 2.87

Supporting Work:

Year	gas price
1	1
2	1.54
5	2.5
12	3.99
14	3.3

Regression
 $y_1 = -0.02669x^2 + 0.5953x + 0.39439$



Sum(seq(y₁, x, 1, 14, 1)) × 1 Enter
 37.42

From 2001 - 2014
 Gas price Sum = 37.42

The average gas price in these 13 years

$37.42 \div 13 = 2.87$