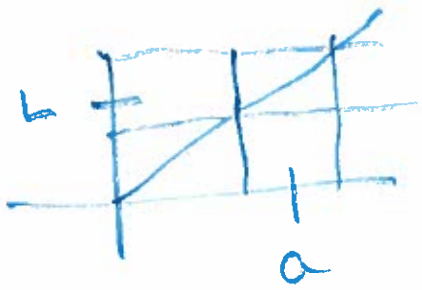
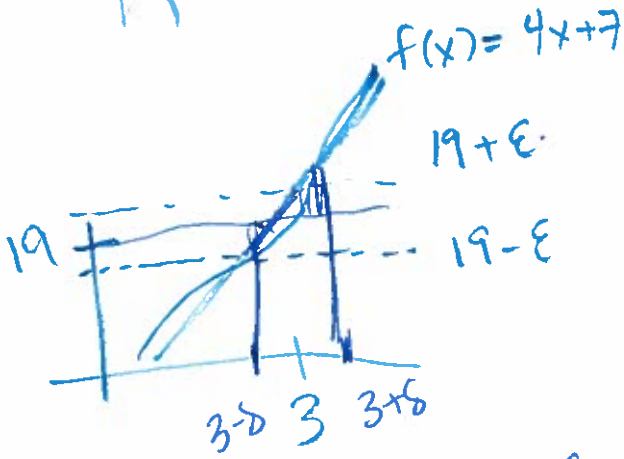
Definition of Derivative

$$f'(x) \equiv \lim_{h \to 0} \frac{f(x+h) - f(x)}{h}$$

Definition of Limit $\varepsilon - \delta$





$$\lim_{x \to 3} 4x+7 = 19$$

$|f(x) - L| < \varepsilon$

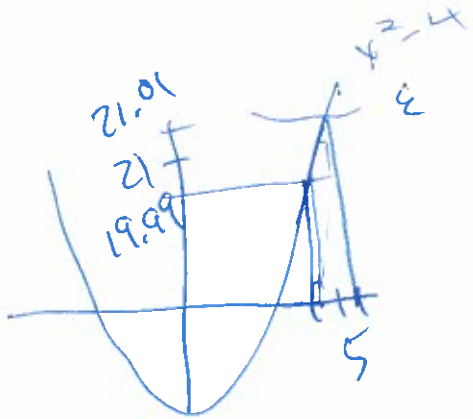
$|4x+7-19| < \varepsilon$

$|4x-12| < \varepsilon$

$4|x-3| < \varepsilon$

$|x-3| < \varepsilon/4 = \delta$

$$\lim_{x \to 5} x^2 - 4 = 21$$



$|x^2-4-21| < .01$

$|x^2-25| < .01$

$x^2 - 4 = 20.99$ $\quad 21 - .01$

$x^2 - 4 = 21.01$ $\quad 21 + .01$

$.0010001$ $\quad x = 4.99899$ $\quad x^2 = 24.99$

$\delta = .000999$ $\quad x = 5.000999$ $\quad x^2 = 25.01$

$$y' = a * b \wedge (x - 2000) \ln(b) \cdot (1)/100$$

before

$$a * b \wedge x \ln(b)$$

r(x)			→
cm	in	lb	Kg
185.42	73"	220 lbs	100

$$New(x) = r(X/2.54)/2.2$$

$$N' = r'(X/2.54) \cdot (1/2.54)(1/2.2)$$

Chain Rule

$$\frac{d}{dx}(f \circ g)(x)$$

X	Y
2001	58607
2002	59724
2003	68925

$2001 \xrightarrow{x-2000} 1 \xrightarrow{r(x-2000)} 58607 \xrightarrow{r\left(\frac{x-2000}{10,000}\right)} 58.607$

$$N(x) = \frac{1}{10,000} r(x - 2000)$$

#	r#
1	58607
2	59,724
3	68.925

exponential

$Y_1 =$ a * b ^ (x)

↓ Transform

$Y_1 =$ a * b ^ (x − 2000) / 10,000

Just use table

y_1 = converted regress...

y_1' =

GROUP NAME: Porter's minions

Date: Feb 20, 2014

Student Names (First and Last)

Speaker/Presenter: Kelo

Writer/Prep: Jenn

Leader/Collaborator: Danielle

Independant Variable (x-axis): decades

Dependant Variable (y-axis): ga

Conclusion (in words):

In 2014 (2014) decades since the beginning of time it is decreasing by 397.13 ga.

Supporting Work:

$y_1 = 2818.288 .. * 1.014... \wedge (x/10) * 7$

$y_2 = 2818.288... * 1.014 \wedge (x/10) * 7$ in (1.014...)

years → decades

dollars → (→) ga

10 d

GROUP NAME: WHO

Date: 2/20

Student Names (First and Last)

Speaker/Presenter: Jenna

Writer/Prep: Kathleen

Leader/Collaborator: Cathryn

Independant Variable (x-axis): decades

Dependant Variable (y-axis): ppb

Conclusion (in words):

At 2014, the amount of steroid in food in babies is increasing by 9282 ppb per decade, increasing the chances of babies dying of steroid overdose.

Supporting Work: EXP. REG.

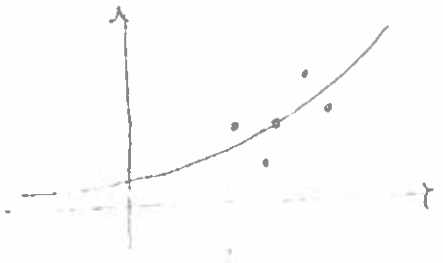
L_1	L_2
.01	122
3	100
6	143
9	200
12	170

STAT CALC

$y = a * b^x$

$a = 108.8033718$

$b = 1.046306398$



$y_1 = 108.80 \cdot (1.0463)^{(x*10)} * 1000$

$y_2 = 108.80 \cdot (1.0463)^{(x*10)} \ln(1.0463) * 1000$

At 2014, $y_2 = 9282$

(14)

* 1 ppm = 1000 ppb

GROUP NAME: We [illegible]

Date: 3/30/[illegible]

Student Names (First and Last)

Speaker/Presenter: Michael

Writer/Prep: Charles

Leader/Collaborator: Cath[illegible]

Independant Variable (x-axis): Time in [illegible]

Dependant Variable (y-axis): Skeeter level in [illegible]

Conclusion (in words):

The skeeter levels in babies is increasing daily at 0.00049%. In a year from now, the level will be increased at 0.00053% — an insignificant difference.

Supporting Work:

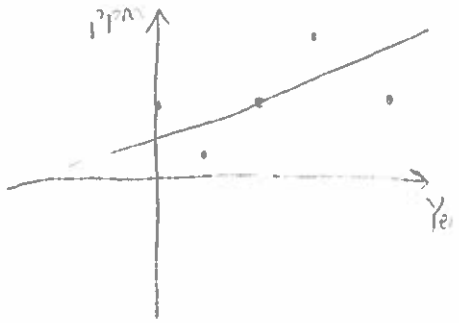
Data

L1	L2
[illegible]	177
3	100
6	147
[illegible]	700
13	176

Exponential Regression

a = 168.8633778

b = 1.0416306345



Ye → [illegible]

ppm → ppb

$Y_1 = a * b \wedge x$

$Y_1 = a * b \wedge (x/365)(1/10,000)$

$Y_1 = a * b \wedge (x/365) \ln b/10,000$

GROUP NAME: Artificially Plain

Date: _____

Student Names (First and Last)

Speaker/Presenter: June / Ahmed

Writer/Prep: Ahmed / June

Leader/Collaborator: _____

Independant Variable (x-axis): Dollars Dep.

Dependant Variable (y-axis): Euro per year

Conclusion (in words):
At $1,100 € per hour, number of crimes is decreasing by -2.1662×10^{-119} Crimes Per Year!! In NJ!!

Supporting Work:

1.37
From Dollars → 1 Euro

From % → Delware Site
117.00

Exponential Regression
$y = a * b^x$ (1.37x)

$y = .305\ldots * .996\ldots^x$

$x = 51,100$

GROUP NAME: Fluffy Ponies

Date: 2/20/14

Student Names (First and Last)

Speaker/Presenter: Milton

Writer/Prep: Courtney

Leader/Collaborator: Tyler

Independant Variable (x-axis): Income

Dependant Variable (y-axis): Crime

Conclusion (in words):

At 91,000 pesos, the number of crimes is increasing by 1853.7661 crimes per peso (in NJ)

Supporting Work:

Dollars → Pesos

% → Actual Population

Sin regression:

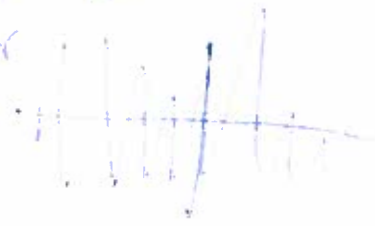
.3285... × sin(.0367x + 2.3813...) + .4623.

9 to pesos

(.3285 × sin(.0367(9.3x) + 2.3813) + .4623) 9,000,000

Lin regression

# of crimes per peso per year



GROUP NAME: Apath.Sis

Date: 2/20

Student Names (First and Last)

Speaker/Presenter: Jason

Writer/Prep: Dallin

Leader/Collaborator:

Independant Variable (x-axis):

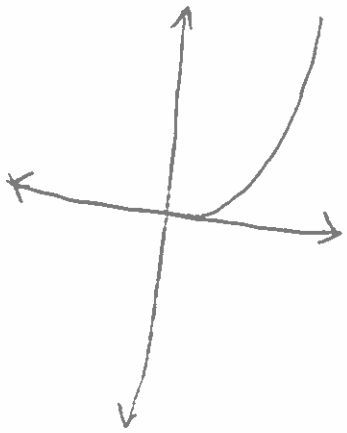
Dependant Variable (y-axis):

Conclusion (in words): In 24168 months since the birth of our lord and Savior, tuition is increasing by 70829 ~~Canadian Money's~~ (→?) per month.

Supporting Work:

$Y_1 = 2818.2886 * 1.0148^{(x*12)}/7$

$Y_2 = 2818.2886 * 1.0148^{(x*12)} \ln(1.0148\ldots)/7$



Dollars → ~~Canadian Money's~~ (→?)

Years → Months