ENTER DATA

STAT | 1: Edit

50	1000
75	1350
100	1000
125	750
25	675

Plot DATA

Statplot 1: ENTER

ZOOM 9:

FUNTION/EQUATION

USE REGRESSION QUADRATIC.

STAT | > 5:

$Y = -.23\ldots X^2 + 36.54\ldots X - 195$

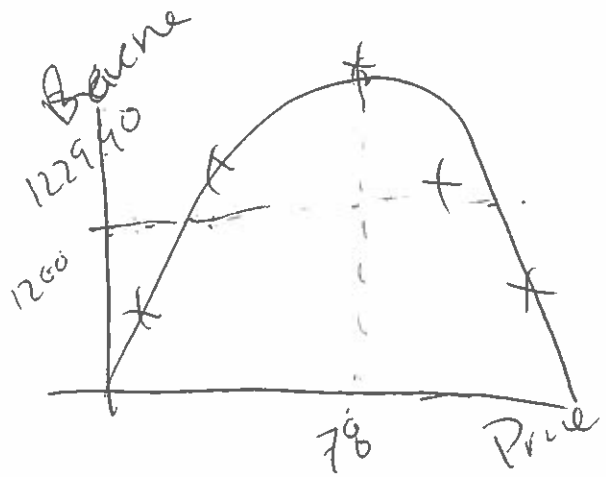
Graph Function

Y= | VARS 5: > > 1: Rcl Y

Graph

TABLE

2nd | Window

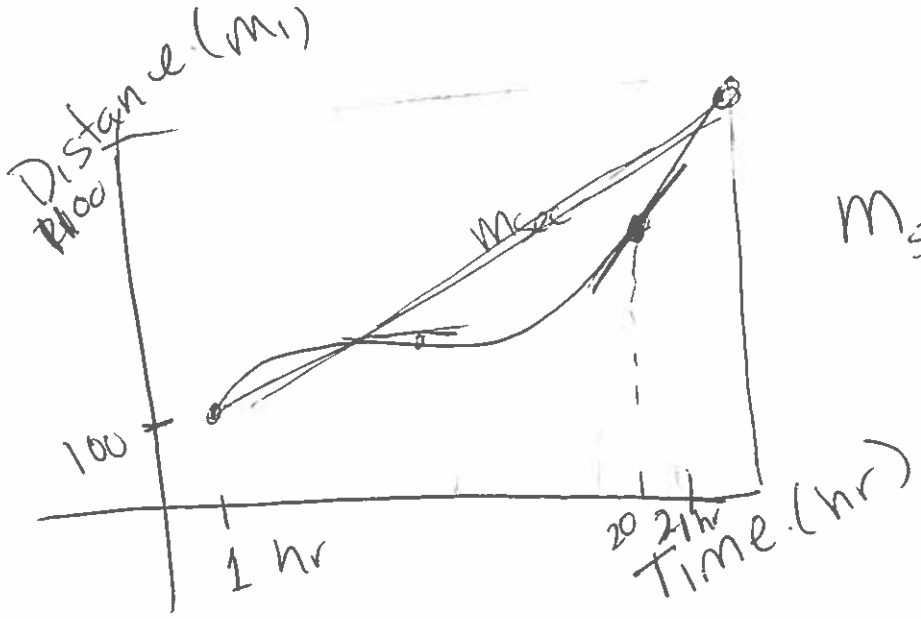


EVALUATE

If I charge $70 I'll make 1229.40

SOLVE

To make 1200. I'd charge $66.60



$$m_{sec} = \frac{\Delta y}{\Delta x}$$

$$= \frac{1100 - 100}{21 - 1}$$

$$= \frac{1000}{20} \frac{m}{n}$$

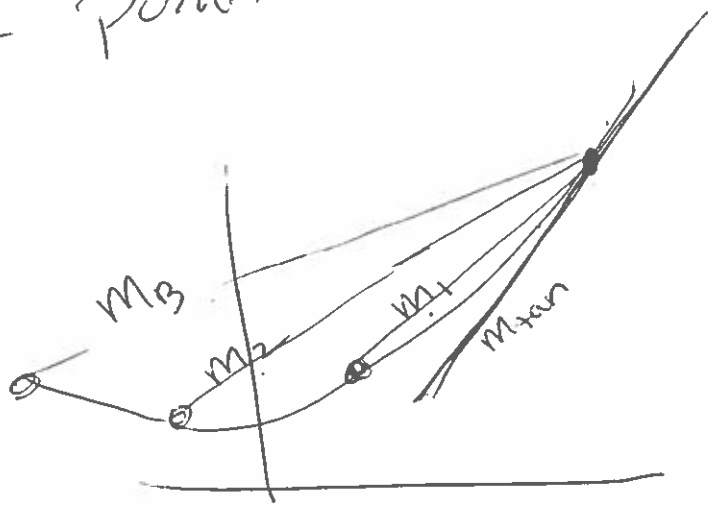
$$= 50 \frac{mi}{hr}$$

Average Rate of Change
requires 2 points

$$m_{sec} = \frac{\Delta y}{\Delta x}$$

Instantaneous Rate of Change.
requires 1 point

$$m_{tan} = \frac{dy}{dx}$$



STAT | 1: EDIT

L1	L2
100	
120	

STAT PLOT 1: ENTER

ZOOM 9:

STAT ▶ 4: LinReg

$y = -.375x + 134.5$

Y= | VARS 5: ▶▶ 1:

GraphV

Approx Are Rate of Chge

$$\frac{\Delta Y}{\Delta X} = \frac{95-65}{100-180} = \frac{30}{-80} = -3/8$$

$-3/8$ book per #1

m_{sec} between 120 and 160

$$\frac{y(120) - y(160)}{120 - 160}$$

$m_{sec} = -.375$

130 and 150

$-.375$

139 and 140

$-.372$

VARS (>) 1: 1:

139.9 and 140

$-.37473$

m_{tan} at 140 $\approx -.375$

limit Notation

$$\lim_{x \to a} f(x) = f(a)$$

$x \to a$

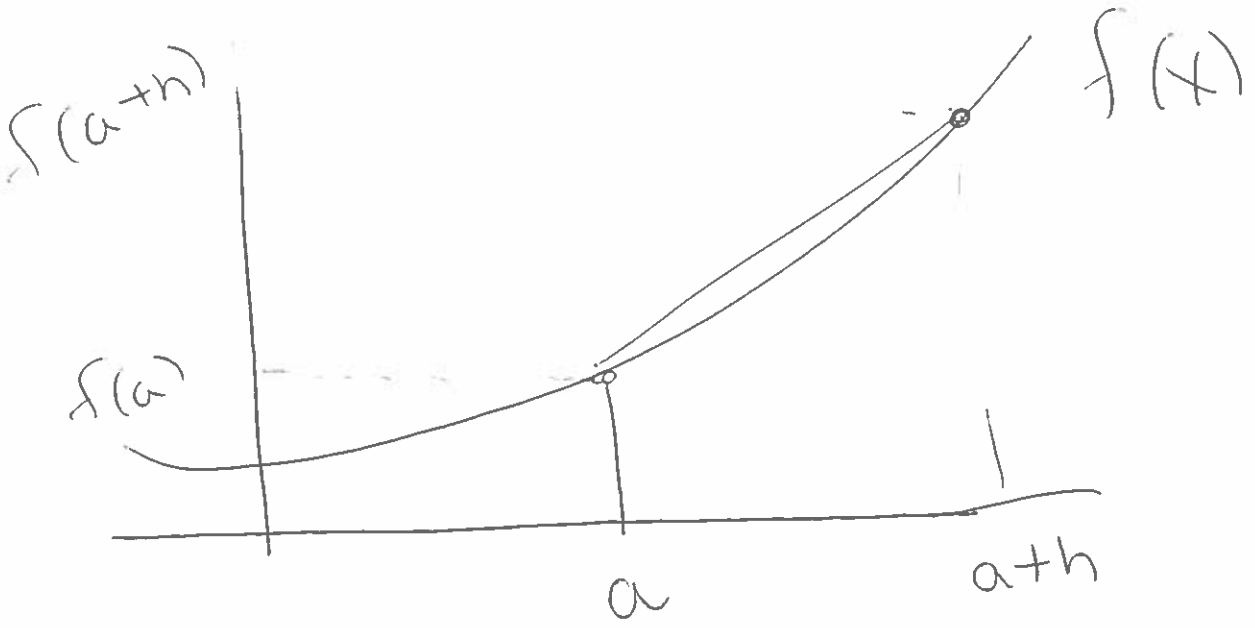
x goes to a

Ex $\lim_{x \to 7} 3x - 2 = 3 \cdot 7 - 2$

$= 19$

Ex $\lim_{x \to 2} \frac{x^2 - 4}{x - 2} = \lim_{x \to 2} \frac{(x-2)(x+2)}{(x-2)}$

$= 4$



$$m_{sec} = \frac{\Delta y}{\Delta x} = \frac{f(a+h) - f(a)}{a+h - a}$$

Try to let $h \neq 0$ $\quad \frac{f(a) - f(a)}{0}$

$y = e^{x} \cdot \frac{x-3}{x-3}$

e^{3} — 0 — e^{1}

3

Limit

$$f(x) = x^2 - 3x + 5$$

$$f(a+h) = (a+h)^2 - 3(a+h) + 5$$

$$a^2 + 2ah + h^2 - 3a - 3h + 5$$

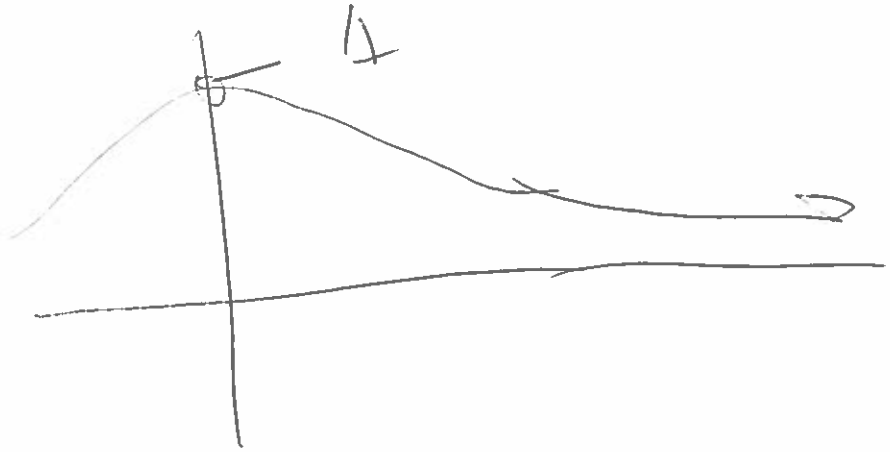
$$f(a) = a^2 - 3a + 5$$

$$f(a+h) - f(a) = 2ah + h^2 - 3h$$

$$\frac{f(a+h) - f(a)}{h} = \frac{h(2a + h - 3)}{h}$$

$$\lim_{h \to 0} \frac{f(a+h) - f(a)}{h} = \frac{dy}{dx}$$

Ex $\lim_{x \to 0} \frac{\sin x}{x} = 1$



Right end $\lim_{x \to \infty} \frac{\sin x}{x} \Rightarrow 0$

$\lim_{x \to -\infty} \frac{\sin x}{x} = 0$

$\lim_{x \to 0} \frac{1}{x^2} = \infty$

$\lim_{x \to 0^+} f(x) =$

GROUP NAME: EL-Gav

Date: 1/23

Student Names (First and Last)

Speaker/Presenter: Greg McKay

Writer/Prep: Harrison Smith

Leader/Collaborator:

Independant Variable (x-axis): Lights

Dependant Variable (y-axis): Bridge

Conclusion (in words): For every 1 foot of bridge lenght, there is .116 lights on bridge

Supporting Work: LED lights on Bridges.

1 LED Light per 10 ft of Bridge Lenght

L_1	L_2
3	10
7	24
9	38
16	44
25	50

Bridge Lights

Slope

a = -.116...

b = 4.99...

c = -3.041

R^2 = .95...

average rate of change = -.116...

GROUP NAME: Don't Know

Date: 1/23

Student Names (First and Last)

Speaker/Presenter: Dominique Carney

Writer/Prep: Valeon Sinclair

Leader/Collaborator:

Independant Variable (x-axis): $ in 1000's

Dependant Variable (y-axis): # of Shoes.

Conclusion (in words):

Average Rate of Change is .2295 Shoes/$in1000's

Supporting Work:

STAT Edit

X	Y
100	145
205	170
505	185
607	280
909	330

$y = ax + b$

$a = .2295...$

$b = 115.229...$

Slope = .2295...

Average Rate of change.

X= Amount of $ in thousands

y= # of Shoes.

When someone makes $700,000, they will have approx 276 pairs of shoes.

GROUP NAME: I ♡ Science.

Date: 1/23

Student Names (First and Last)

Speaker/Presenter: Lindsay

Writer/Prep: Corrina

Leader/Collaborator:

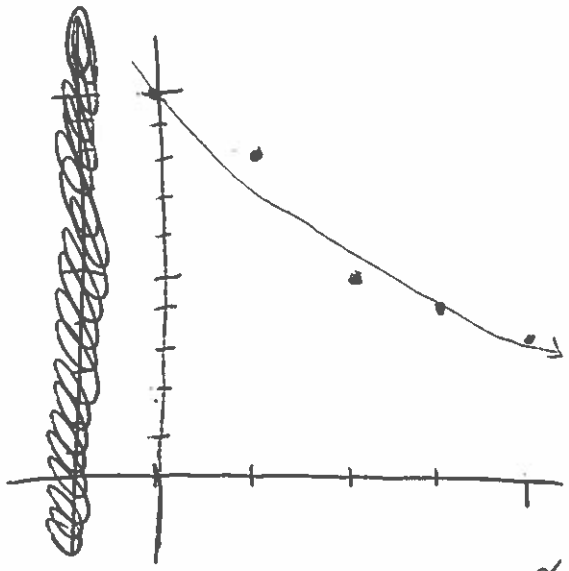
Independant Variable (x-axis): Time (Hours)

Dependant Variable (y-axis): Drug Concentration (μg/mL)

Conclusion (in words): The average rate of change between the time of injection and four hours was negative 16.25 micrograms per mililiter.

Supporting Work:

Time (Hours)	Drug Concentration (Micrograms / Milliliter)
0	100
1	80
2	50
3	40
4	35



$y = 98.223(0.756)^x$

$$\frac{\Delta Y}{\Delta X} = \frac{(100-35)}{(0-4)} = -\frac{65}{4} = -16.25 \quad \text{From Data}$$

$$\frac{Y_1(4) - Y_1(0)}{4-0} = \frac{-66.08}{4} = -16.52 \quad \text{From Regress}$$

GROUP NAME: [illegible]

Date: 1/23/14 1/28/14

Student Names (First and Last)

Speaker/Presenter: Andy | Jacob

Writer/Prep: Brittany

Leader/Collaborator: Kyle

Independant Variable (x-axis): Years

Dependant Variable (y-axis): [illegible]

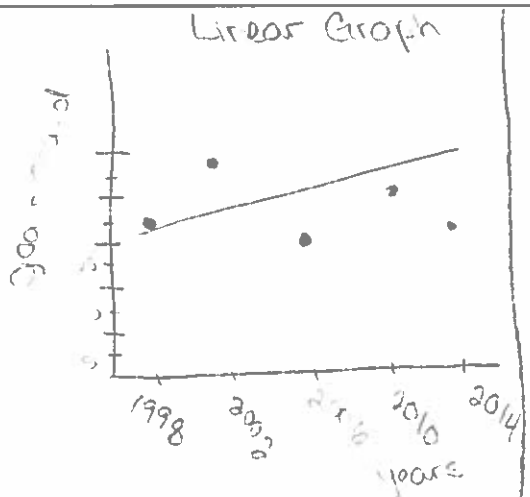
Conclusion (in words):

There is approximately two additional goals scored per each subsequent world cup (per 4 years).

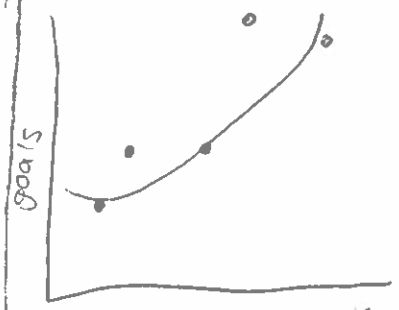
Supporting Work:

STAT 1: Ed +

L1 Years	L2 Goals Scored
1	35
2	29
3	31
4	45
5	43



L1 Years	L2 Goals Scored
1	35
2	39
3	31
4	45
5	43



Y= VARS 5: > > 1: Graph

STAT > 4: lin reg enter

y = ax + b

a = 2.2

b = [illegible]

average rate of increase is 2.2 goals per subsequent world cup

STAT [illegible] 2: enter

y = 2.2x + [illegible]

VARS > Yvars 1: 1: ((3.1) =

VARS > Yvars 1: 1: (29)) ÷ (3.1-2)

= 2.2

2nd Trace 6: 3 enter

dy/dx = 2.2

The instantaneous rate of change in year 3 is 2.2 goals.

STAT > 5: QuadReg

enter

VARS > Yvars 1: 1: ((5) = VARS > Yvars 1: 1: (2) ÷ (5-2) = 2.9

VARS > Yvars 1: 1: ((3) = VARS > Yvars 1: 1: (2) ÷ (3-2) = 1.48