151 M d17

GROUP NAME: BEST TRIENDS

Date: 04/30/2014

Student Names (First and Last)

Speaker/Presenter: VINNIE AHMAD

Writer/Prep: LAUREN DORO

Independant Variable (x-axis): _____

Dependant Variable (y-axis): _____

Leader/Collaborator: _____

Conclusion (in words):

MIDTERM

Supporting Work:

(2) $S(p) = 0.5p^3 - 3$

$S(0) = 0.5(0)^3 - 3$

$S(0) = -3$

$S(8) = 0.5(8)^3 - 3$

$S(8) = 253$

$\frac{f(8) - f(0)}{8 - 0}$

$S_{AVG} = \frac{S(8) - S(0)}{8 - 0}$

$= \frac{253 - (-3)}{8}$

$= \frac{256}{8}$

$S_{AVG} = 32$

$S'(t) = 1.5p^2$

~~$S_{INS}(4) = 0.5(4)^3 - 3$~~

~~$S(4) = 29$~~

$S'(4) = 1.5(4)^2$

$S' = 24$

(1) CALCULUS IS THE STUDY OF RATES OF CHANGE

THE DERIVITIVE IS THE SLOPE OF THE TANGENT LINE.

ZERO MULTIPLIED BY INFINITY COULD BE ANYTHING

#1 ANSWER

#2 ANSWER

(2) THE AVERAGE RATE OF CHANGE BETWEEN P=0 AND P=8 IS 32.

THE INSTANTANEOUS RATE OF DECLINE AT P=4 IS 24.

GROUP NAME: Money Makers Date: 04/02/2014	Student Names (First and Last) Speaker/Presenter: [illegible] K. Writer/Prep: Edna O Leader/Collaborator: Kayla
Independant Variable (x-axis): Dependant Variable (y-axis):	

Conclusion (in words):

Supporting Work:

3. If $g(n) = -1$ and $g(n+1) = 6$, is there a pt when $g'(c) = ?$ What theorem did you use?

Yes/No: Yes Theorem: Mean Value Theorem

What conditions let us do this? Hence, g must be differentiable

$$\frac{f(a) - f(b)}{a - b} = f'(c)$$

$$\frac{-1 - 6}{n - (n+1)} = \frac{-7}{-1} = 7$$

$g'(c) = 7$

GROUP NAME: Trates

Date: _____

Student Names (First and Last)

Speaker/Presenter: Shanon Isoe

Writer/Prep: Onur Turkan

Independant Variable (x-axis): _____

Dependant Variable (y-axis): _____

Leader/Collaborator: _____

Conclusion (in words):

Midterm #4, 5

4a.) $y = \frac{1}{108}x + 2.25$

b.) 2.9813.....

Supporting Work:

4-) find the equation of the tangent line at the point $x = 81$ for $f = y = \sqrt[4]{x}$ or $y = x^{1/4}$

POINT

$y(x) = \sqrt[4]{x}$

$y(81) = \sqrt[4]{81}$

$y = 3$

POINT (81, 3)

SLOPE

derv of $y = \sqrt[4]{x}$

$y'(x) = \frac{1}{4}x^{-3/4}$

$y'(81) = \frac{1}{4}(81)^{-3/4}$

SLOPE $= \frac{1}{108}$

POINT-SLOPE

$y - y_1 = m(x - x_1)$

$y - 3 = \frac{1}{108}(x - 81)$

$y - 3 = \frac{1}{108}x - .75 + 3$ (+3)

$y = \frac{1}{108}x + 2.25$

$= y = \frac{1}{108}x + 2.25$

$= .00925\ldots$

b= caculus app. 4th of 79 $3 - \frac{2}{108}$

$y(79) = \frac{1}{108}(79) + 2.25$ → 2.9814

$\sqrt[4]{79} = 2.9813\ldots$

— ABOVE FROM CALC

GROUP NAME: Trates

Date:_____

Student Names (First and Last)

Speaker/Presenter: Shanon Isoe

Writer/Prep: Onur Turkan

Leader/Collaborator:_____

Independant Variable (x-axis):_____

Dependant Variable (y-axis): _____

Conclusion (in words):

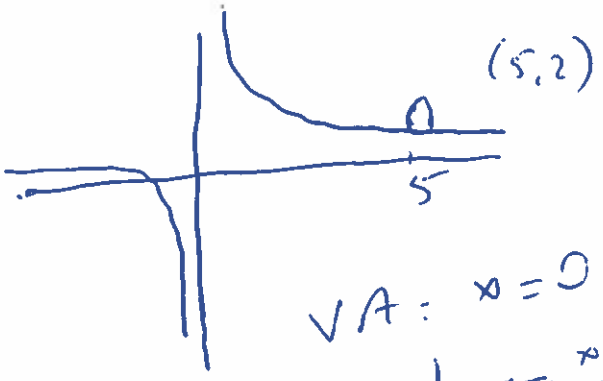
Midterm #5

Supporting Work:

9.) a.) $\lim_{x\to 4} \frac{x^2-25}{x^2-5x} = \lim_{x\to 4} \frac{(x-5)(x+5)}{x(x-5)}$

$\lim_{x\to 4} \frac{x+5}{x} = \frac{9}{4}$ ✓

What does the graph $y = \frac{x^2-25}{x^2-5x}$ look like at $x=0$?



VA: $x=0$

What does the graph $y = \frac{x^2-25}{x^2-5x}$ look like at $x=5$?

Hole $y(5) = \frac{0}{0}$ undefi.

$\lim_{x\to 5} f(x) = 2$ BTW

b.) $\lim_{x\to 0} \frac{\sin(8x)}{2\cos x - 2} = \frac{0}{0}$ use L'Hopital Rule.

$\lim_{x\to 0} \frac{8\cos(8x)}{-2\sin(x)} = \frac{8}{-2(-0)} = \frac{8}{+0} = +\infty$

GROUP NAME: Functional Paradigm

Date: 04/02/14

Student Names (First and Last)

Speaker/Presenter: Nader Shenouda

Writer/Prep: Karol Zarski

Leader/Collaborator:

Independant Variable (x-axis):

Dependant Variable (y-axis):

Conclusion (in words):

$$\frac{\sec^2(\sin^{-1}(t))}{\sqrt{1-t^2}}$$

Supporting Work:

6.

a) $g(s) = \frac{\cosh(x)}{e^x}$

$$e^x \left[\frac{(e^x - e^{-x})}{2} \cdot (e^x) - \left(\frac{e^x + e^{-x}}{2}\right) e^x\right] \Big/ (e^x)^2$$

$$\frac{e^{2x} - e^{-2x}}{2} - \frac{e^{2x}}{2}$$

$$\frac{e^{2x}}{e^{2x}}$$

Quotient Rule

$$e^x \sinh(x) = \cosh(x) \cdot e^x$$

$$(e^x)^2 \quad e^{2x}$$

or

$$\frac{\sinh(x) - \cosh(x)}{e^x}$$

b) $K(t) = \tan(\sin^{-1}(t))$

$\sec^2(\sin^{-1}(t)) \cdot \frac{d}{dt}\sin^{-1}(t)$

$\frac{1}{\sqrt{1-t^2}}$

7.

$y = \sec(t)^{2t}$ logarithmic

~~$\sec^{2t}(t)\tan^{2t}(t)$~~

$\ln y = 2t \ln(\sec t)$

$\frac{1}{y} \cdot \frac{dy}{dt} = 2t \cdot \frac{1}{\sec t} \cdot \sec(t)\tan(t) + \ln(\sec t) \cdot 2$ differentiate

$\frac{dy}{dt} = y\left[2t \tan t + 2 \ln(\sec t)\right]$

$= \left(\sec(t)^{2t}\left[2t \tan t + 2 \ln \sec t\right]\right)$

GROUP NAME: Money Makers

Date: 4/2/14

Student Names (First and Last)

Speaker/Presenter: Brian

Writer/Prep: Edna

Leader/Collaborator: Monica V

Independant Variable (x-axis): _____

Dependant Variable (y-axis): _____

Conclusion (in words):

Supporting Work:

a) A spherical balloon with a volume $V = \frac{4}{3}\pi r^3$ ... at 45 ... how fast is the radius ... ?

• As the ... rate of the radius increase ... decrease

$V = \frac{4}{3}\pi r^3$

$\frac{dv}{dt} = 3 \cdot \frac{4}{3}\pi r^2 \frac{dr}{dt}$

$\frac{dv}{dt} = 4\pi r^2 \frac{dr}{dt}$

$45 = 4\pi(7)^2 \frac{dr}{dt}$

$\frac{45}{196\pi} = \frac{dr}{dt}$

$\frac{dr}{dt} = .07$ in/s

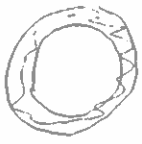
rate ... value ... 1 cm/ ... 1 cm ...

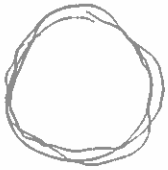
$\frac{dv}{dt} = 45$ ... $\frac{dr}{dt} = .1$ in/s

b) $\frac{dv}{dt} = 4\pi(11^2)\frac{dr}{dt}$

$\frac{45}{484} = \frac{dr}{dt}$

$\frac{dr}{dt} = .09$





GROUP NAME: We mean business

Date: 4/2/14

Student Names (First and Last)

Speaker/Presenter: Christina Trujillo

Writer/Prep: Yasmin Silvero

Leader/Collaborator: ______

Independant Variable (x-axis): ______

Dependant Variable (y-axis): ______

Conclusion (in words): Midterm Review #9, #13

Supporting Work:

(1) Given the data, Find a cubic regression

$29.166x^3 - 325x^2 + 1020.833x - 525$

STAT EDIT

L1	L2
1	200
3	400
5	100
7	700

Use Newtons Method to find zeros. Be sure to give the first [illegible] interations. Start with a guess of −2

STAT CALC 6: Cubic

Iteration: −2

Iteration .4618

" .3345

" .6035

zero .6355

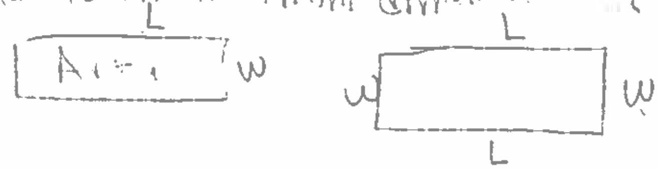
Y_1 = VARS 5 >> 1. RegEQ

−2 Sto X

X − Y_1 / nDeriv(Y_1, X, X) → X

(13)

What is the maximum dimension [illegible] rectangle whose perimeter is 100



A = L · W

2L + 2W = 100

W = 50 − L

A = L (50 − L)

Max: L = 25

W = 50 − 25

= 25

25 × 25

Y_1 = X(50 − X)

[illegible]

[illegible] 0

"

[illegible]

GROUP NAME: Polar Bearz / Cha-Ching
Date: 4/2/14

Student Names (First and Last) Trey Murfill
Speaker/Presenter: Tatiana Calderon
Writer/Prep: Sheila Mae Gan
Leader/Collaborator: Frenwot, Kausalya M

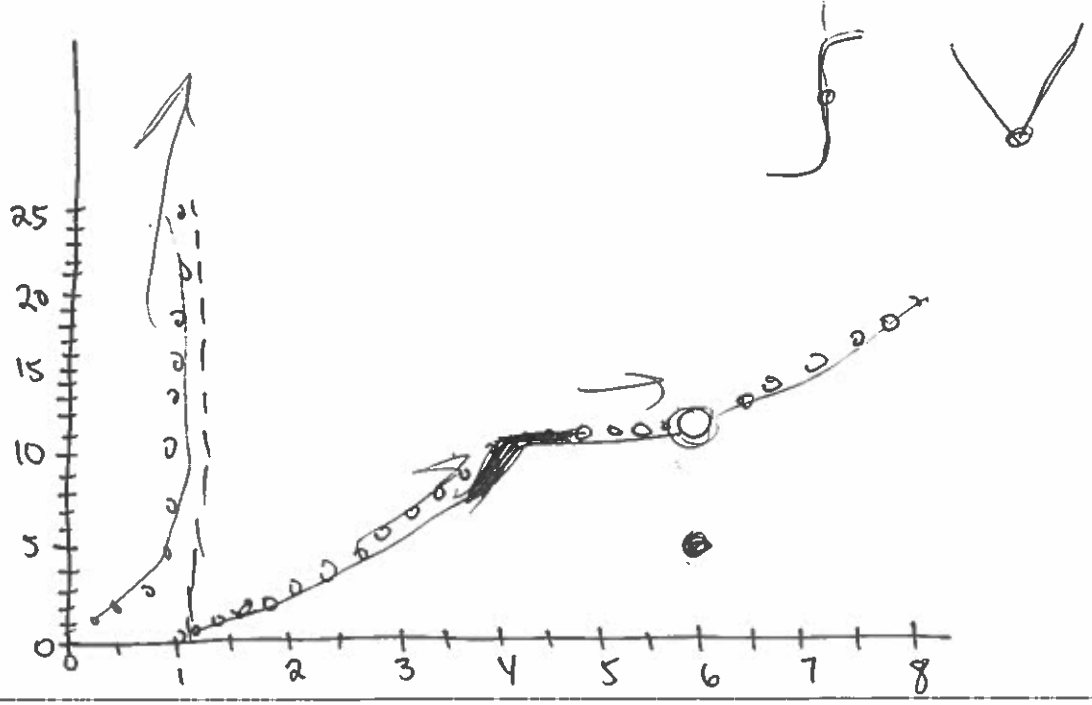
Independant Variable (x-axis): _____
Dependant Variable (y-axis): _____

Conclusion (in words):

Supporting Work:

10. Fill in the table by using the graph of data below:

	x = 1	x = 4	x = 6
Function is continuous? Y/N?	N	Y	N
Function is Differentiable? Y/N?	N	N	N
What is the Limit Value From left?	∞	8	10



Asym Corner hole.

GROUP NAME: Polar Bearz / Cha-Ching

Date: 4/2/14

Student Names (First and Last)

Speaker/Presenter: Kawsalya

Writer/Prep: Sheila

Leader/Collaborator: Frehiwot, Tatiana

Independant Variable (x-axis):

Dependant Variable (y-axis):

Conclusion (in words):

Supporting Work:

11. Given $f(x) = x(x-5)$. Use the definition of derivative and the limits to find the following.

$f'(2)$

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

$$\frac{f(x+h) - f(x)}{h}$$

$$\frac{(x+h)^2 - 5(x+h) - (x)(x-5)}{h}$$

$(x+h)(x+h) - 5x - 5h - (x^2 - 5x)$

$x^2 + xh + xh + h^2$

$$\frac{x^2 + 2xh + h^2 - 5x - 5h - x^2 + 5x}{h}$$

$$\frac{2xh + h^2 - 5h}{h}$$

$$\frac{h(2x + h - 5)}{h}$$

$f'(x) \to 2x - 5$

$f'(2) = 2(2) - 5 = -1$

$\lim_{x \to 2} f(x)$

$2(2-5)$

$2(-3)$

$= -6$

Given $\varepsilon > 0$ Find δ

Remember

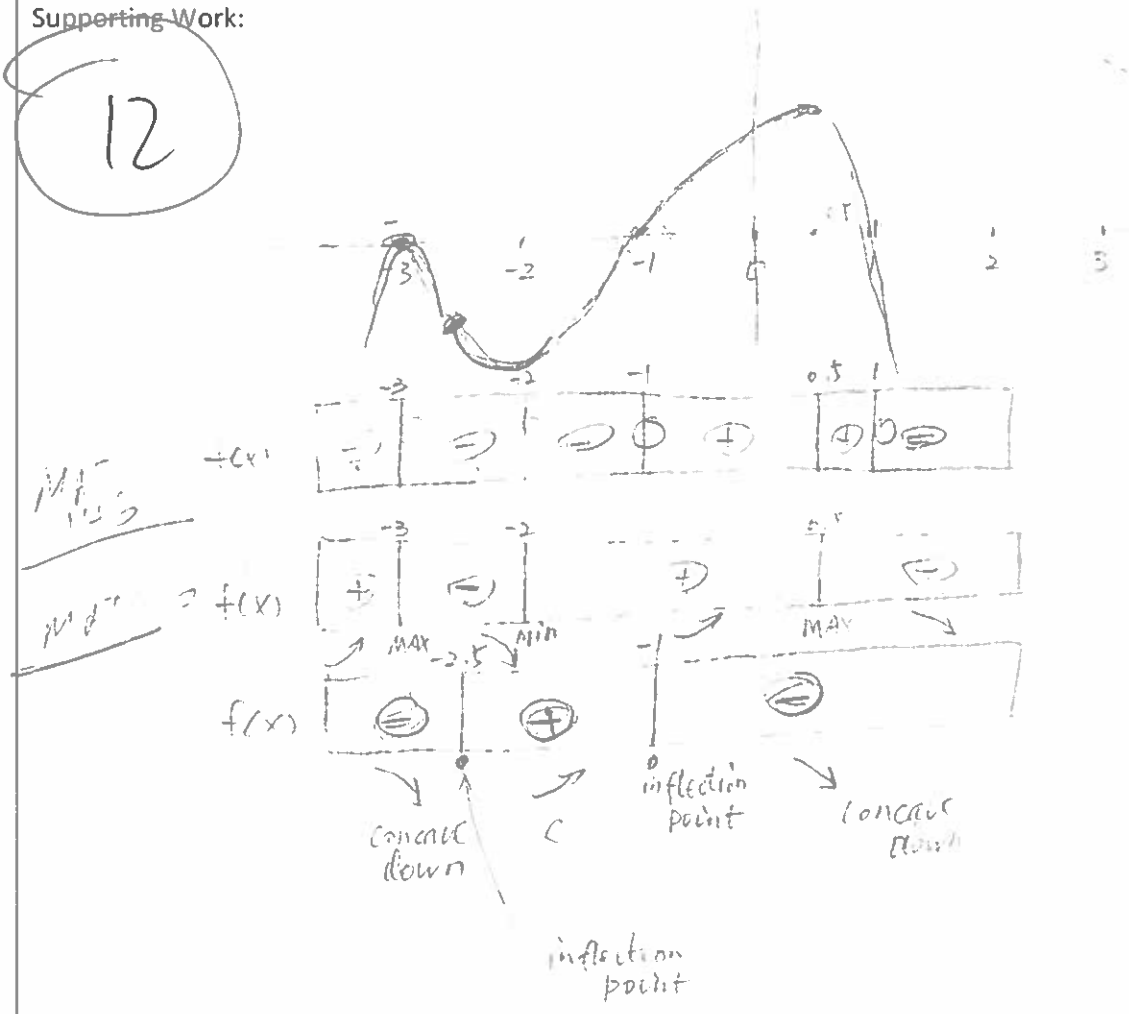
[illegible]

GROUP NAME: Illuminati	Student Names (First and Last)
Date: 4/2/2014	Speaker/Presenter: Ryan Piotrowski
Independant Variable (x-axis):	Writer/Prep: Dawson Thom
Dependant Variable (y-axis):	Leader/Collaborator: Riley Lee

Conclusion (in words):

Supporting Work:

12



the function is concave up : $-2.5 < x < -1$

Inflection point : $x = -1, -2.5$

The extrema : $x = -3, -2.5$

The function decreases and is concave down $x > -2.5$ and $x < -2.5$