

GROUP NAME: <u>Hot Shots</u>	Student Names (First and Last)
Logo:	Speaker/Presenter: <u>ELIMPIU DIOSTEANU</u>
Date: _____	Writer/Prep: <u>Amy Mueller</u>
Topics:	QC/Leader: <u>OKSANA POBEREZHYUK</u>

Instructions: Practice test question #1

1. what is calculus?

The study of change

what is varying in calculus?

Functions

what is the derivative

The slope of the tangent line

- Instantaneous rate of change
- dy/dx
- m_{tan}
- $f'(x) = y'$

GROUP NAME:

Busy Bees

Logo:

Donna Nelson-Hutchinson
Student Names (First and Last) Nishane G. He

Speaker/Presenter: _____

Date: _____

Writer/Prep: _____

Topics:

QC/Leader: _____

Instructions:

$$2. \lim_{x \rightarrow 2} 4x + 3 = 11$$

Step 1: set the functions with absolute values

$$\lim_{x \rightarrow 2} (4x + 3) = 11$$

$$\lim_{x \rightarrow 2} |4x + 3 - 11| < \epsilon$$

$$\lim_{x \rightarrow 2} |4x - 8| < \epsilon$$

$$\lim_{x \rightarrow 2} \frac{4|x-2|}{4} < \frac{\epsilon}{4}$$

$$|x-2| < \frac{\epsilon}{4} = \delta$$

Step 2: Verifying

$$\lim_{x \rightarrow 2} |x-2| = \frac{\epsilon}{4}$$

$$0 < 4|x-2| < 8 = \frac{\epsilon}{4}$$

$$0 < 4|x-2| < 8 = \epsilon$$

$$|4x - 8| < 8$$

0

(It Verifies)

<p>GROUP NAME:</p> <p>Logo:</p>	<p>Student Names (First and Last)</p> <p>Speaker/Presenter: <u>Nick Ignorab</u></p>
<p>Date: _____</p> <p>Topics:</p>	<p>Writer/Prep: _____</p> <p>QC/Leader: _____</p>

Instructions:

2.) ~~f(x) =~~
~~lim~~

$$\lim_{x \rightarrow 2} 4x + 3$$

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

~~f(x) =~~ $|4x + 3 - 11| < \epsilon$


$$|4x - 8| < \epsilon$$

$$4|x - 2| < \epsilon$$

$$\Rightarrow |x - 2| < \frac{\epsilon}{4} = \delta$$

Answer = $\frac{\epsilon}{4}$

Comeisha Martin

GROUP NAME: BUSY BEES
 Logo: 
 Date: 2/13/13
 Topics:

Student Names (First and Last): Nishane Carter
Donna Nelson-Hutchins
 Speaker/Presenter: _____
 Writer/Prep: Tiffany Gevaras
 QC/Leader: _____

Instructions:

#3

$$\lim_{x \rightarrow 3} \frac{x^2 - 5x + 6}{x^2 - 9}$$

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


$$\lim_{x \rightarrow 3} \frac{x-2}{x+3} = \frac{3-2}{3+3} = \frac{1}{6}$$

Continuous: $x^2 - 9 \neq 0$ $x \neq 3, -3$
 Everywhere except \rightarrow
 $\frac{f(3)}{f(-3)}$ don't exist!

$$(-\infty, -3) \cup (-3, 3) \cup (3, \infty)$$

Removably
 DISCONTINUOUS: $x = 3$
 There is a hole.

- Continuity at "a"
- 1) limit exists
 - 2) $f(a)$ exists
 - 3) $f(a) = \lim$

GROUP NAME: <u>B0-speed</u>	Student Names (First and Last) <u>Sara Zimmermann</u>
Logo: 	Speaker/Presenter: <u>James Mulbah</u>
Date: _____	Writer/Prep: <u>Arbely Voprivsky</u>
Topics: _____	QC/Leader: <u>Sara Mionic</u>

Instructions: Quest #4

$$f(x) = \begin{cases} Ax - 7 & x < 2 \\ x^2 & x \geq 2 \end{cases}$$

find A:
equalise

~~xxxxxxxxxxxx~~

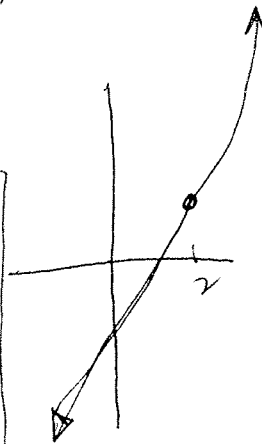
$$A(2) - 7 = 4$$

$$A(2) = 4 + 7$$

$$A(2) = 11$$

$$A = \frac{11}{2}$$

$$x^2 = 4$$



for a continuous function right limit, left limit and value of $f(x)$ at that point are equal.
(limit also equals at this)

$$\lim_{x \rightarrow 2^-} f(x) = A(2) - 7$$

$$\lim_{x \rightarrow 2^+} f(x) = 2^2 = 4$$

GROUP NAME:	Student Names (First and Last)
Logo:	Speaker/Presenter: <u>Nick Ignorato</u>
Date: _____	Writer/Prep: <u>Dan Beck (Peter)</u>
Topics:	QC/Leader: <u>Dan Garcia</u>
<u>Sushil Inayat:</u>	

Instructions:

5.)

$$\lim_{x \rightarrow 0^-} = \text{DNE}$$

$$\lim_{x \rightarrow 1} = \cancel{0} \quad 0$$

$$\lim_{x \rightarrow 2^-} = \cancel{\text{DNE}} \quad -\infty$$

$$\lim_{x \rightarrow 3^-} = 0$$

$$\lim_{x \rightarrow 4^-} = 30$$

$$\lim_{x \rightarrow \infty^-} = \infty \text{ or } 20$$

Liffany Grevaras

Nishane Carter

Cameisha Martin

GROUP NAME:

Busy Bees

Logo:



Date:

2/13/13

Topics:

Donna Nelson-HutJohnson
Student Names (First and Last)

Speaker/Presenter: _____

Writer/Prep: _____

QC/Leader: _____

Instructions:

#7. $h(t) = t(2-t) + 3$

Step 1: Distribute
 $t(2-t) + 3$

$$h(t) = 2t - t^2 + 3$$

Step 2: Plug in "0" for "t"

$$h(0) = 2(0) - (0)^2 + 3$$

$$h(0) = 3$$

Step 3: Plug in "2" for "t"

$$h(2) = 2(2) - (2)^2 + 3$$

$$= 3$$

$$(0, 3) \quad (2, 3)$$

Ave rate of change

$$\frac{\Delta Y}{\Delta X} = \frac{h(2) - h(0)}{2 - 0} = \frac{3 - 3 - 0}{2}$$

Instantaneous Rate

$$h'(t) = 2 - 2t$$

at $t=1$

$$h'(1) = 2 - 2(1) = 0$$

GROUP NAME: Balls

Logo: 

Student Names (First and Last) GABE
MATT
ERIC MCSEED JAMES GAUGHAN

Speaker/Presenter: _____

Date: 2/13/13

Writer/Prep: _____

Topics:

QC/Leader: _____

Instructions:

8. Use definition of derivative to find $f'(x)$ if $f(x) = x(x+1) = x^2 + x$

$$\lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$$

$$f(x+h) = 1(x+h)^2 + 1(x+h)$$

$$= x^2 + 1 \cdot 2xh + h^2 + 1x + 1h$$

$$f(x) = x^2 + 1x + 1h$$

$$\frac{f(x+h) - f(x)}{h} = \frac{2xh + h^2 + 1h}{h}$$

So $\lim_{h \rightarrow 0} \frac{h(2x + h + 1)}{h}$

$$= 2x + 1$$

GROUP NAME: Calc 1 update

Logo:

Date: 2/13/13

Topics: Practice test Question # 9

Student Names (First and Last)

Speaker/Presenter: Alex Greguanto

Writer/Prep: Sergey Lykhanov

QC/Leader: _____

Instructions: Work Neatly

Find f' of the following.

a) $f(x) = \sqrt{x} \sin(\pi/3) = \sin \frac{\pi}{3} \cdot \sqrt{x} = .866... \cdot \sqrt{x}$

$.866... \cdot x^{\frac{1}{2}} = .866... \cdot \frac{1}{2} x^{-\frac{1}{2}} = \left[\frac{.866...}{2} \cdot \frac{1}{\sqrt{x}} \right]$

b) find f' of the following

$f(x) = \frac{5}{x^4} = 5x^{-4}$

$f'(x) = 5(-4)x^{-5}$

$f'(x) = \frac{-20}{x^5}$

Wendy Martin
 Tiffany Grevaras
 Nishane Carter
 Anna Nelson-Hubert

GROUP NAME:	Student Names (First and Last)
Logo:	
Date: _____	Speaker/Presenter: _____
Topics:	Writer/Prep: _____
	QC/Leader: _____

Instructions:

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a) $\lim_{x \rightarrow \infty} \frac{9x^{20} - 5x + 6}{x^{20} - 9} = 9$ DN = DD so $y = \frac{LN}{LD} = \frac{9}{1}$

b) $\lim_{x \rightarrow \infty} \frac{-9x^{200} - 5x + 6}{x^{20} - 9} = -\infty$ DN > DD So slant asymptote.
 $y = -9x^{180}$ "Sad Parabola"

c) $\lim_{x \rightarrow \infty} \frac{9x^{20} - 5x + 6}{x^{200} - 9} = 0$ DD > DN So
 HA is $y = 0$

d) $\lim_{x \rightarrow \infty} \frac{-9x^{21} - 5x + 6}{x^{20} - 9} = -\infty$ DN > DD So slant asymptote
 $y = -9x$ "Discard"

e) $\lim_{x \rightarrow \infty} \frac{\frac{9}{x^{180}} - \frac{5}{x^{199}} + \frac{6}{x^{200}}}{1 - \frac{9}{x^{200}}} = \frac{0}{1} = 0$

Divide by $x^{\text{biggest power}}$

GROUP NAME: HOT SHOTS

Student Names (First and Last)

Logo:

Speaker/Presenter: OLIVIANA PEREIRA

Date: _____

Writer/Prep: OLIMPIU DIOSTEANU

Topics: # (11)

QC/Leader: Amy mueller

Instructions:

(11) $x = 15.516351$
 MAX $y = 54.539687$

STAT: 1 EDIT

L1	L2
8	35
10	45
12	46
13	48
15	54

(Plots ON)
 ZOOM: 9

STAT > CALC: 7 Quart Reg

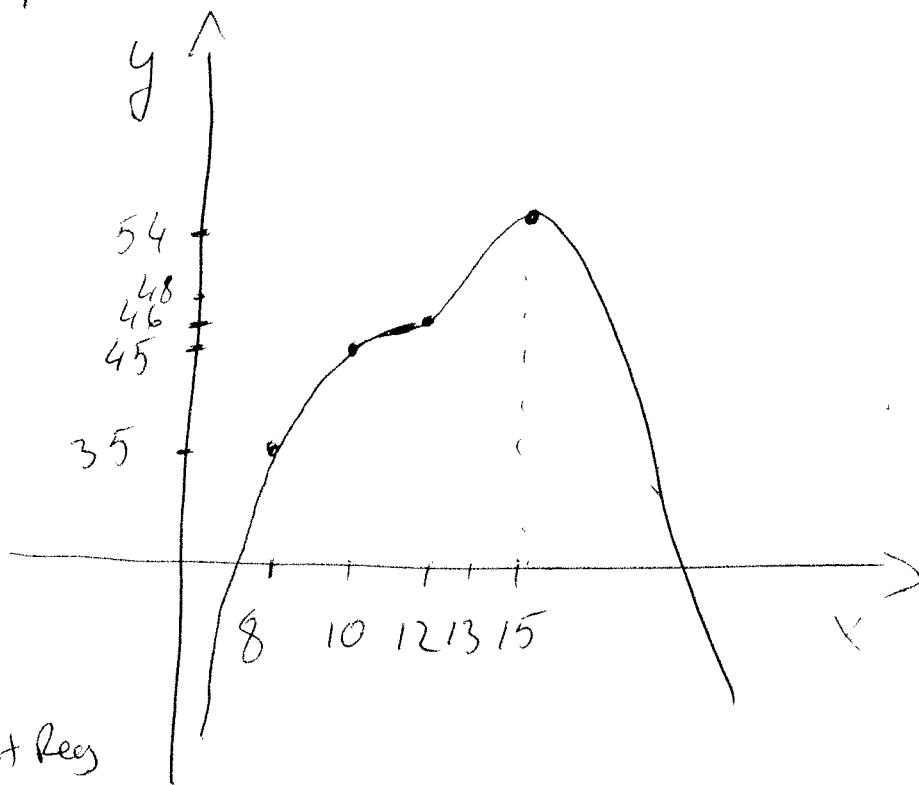
$Y_1 = \text{VARS}; 5 \text{ (D)} : 1$

ZOOM: 9

2ND: TRACE: 4
 CALC

LEFT: GUESS (4 ENTER)
 RIGHT: GUESS (6 ENTER)

$x = 15.516...$
 $y = 54.539...$



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Instructions:

$y_1 = \text{vars } 5 \gg 1$
 $y_2 = \text{nderiv}(y_1, x, x)$
 Calc 2: zero
 Left
 Right
 Guss.
 $x = 15.516 \dots$ $y_2 = 0$

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$\lim_{x \rightarrow \infty} f(x) = -\infty$
 $x \rightarrow \infty$

