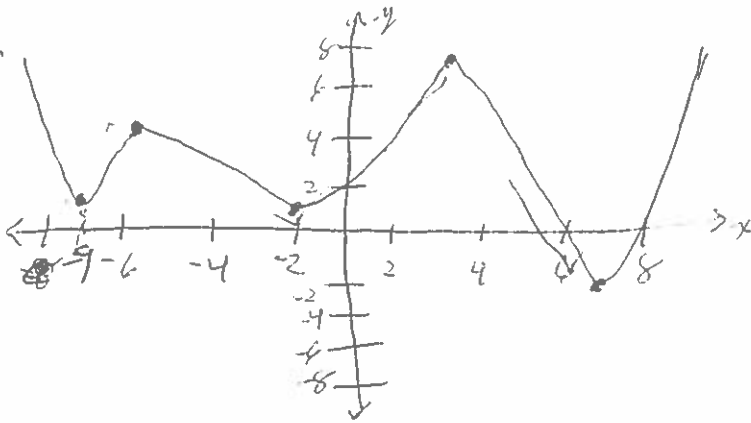


GROUP NAME:	Student Names (First and Last)
Date: <u>4/3/14</u>	Speaker/Presenter: _____
Independent Variable (x-axis): _____	Writer/Prep: _____
Dependant Variable (y-axis): _____	Leader/Collaborator: _____

Conclusion (in words):

Mind #1

Supporting Work:



where \Rightarrow x-values

(a) The function is decreasing over which intervals?

$(-\infty, -9)$, $(-6, -2)$, $(3, 7)$ The graph decreases at these points.

(b) Where are the local maxima?

-6 , 3 These are the highest points on the graph.

(c) What is the sign of the leading coefficient of f ?

Positive Rises to the left and rises to the right.

Happy parabola

(d) Which of the following is a possibility for the degree of f ?

4 5 6 7 8 9 There are at least six faces on the graph.

Faces =

GROUP NAME:

Student Names (First and Last)

Date: 4/3/14

Speaker/Presenter: Zolboo Baasanjav

Independent Variable (x-axis): _____

Writer/Prep: _____

Dependant Variable (y-axis): _____

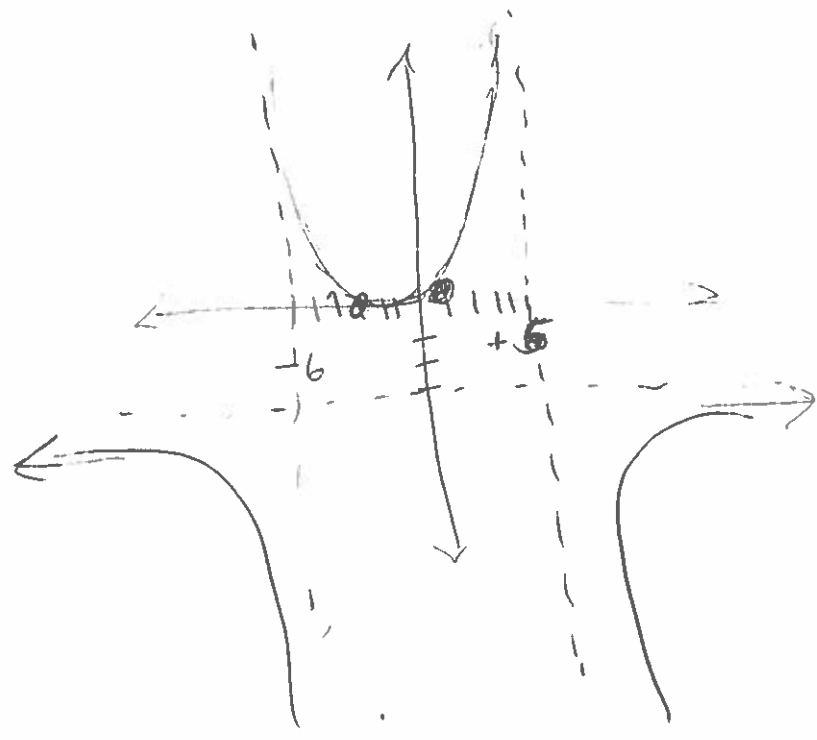
Leader/Collaborator: _____

Conclusion (in words):

Mid #2

Supporting Work:

- Horizontal Asymptote = $-\frac{3}{1} = \frac{LN}{LD}$
- Vertical Asymptote = $-6, 5 = ZD$
(x+6)(x-5)
- x-intercepts = $-3, 1$
(zero's of numerator)
(x+3)(x-1)
- Leading coef. = $\frac{-3}{1} = -3$



$$f(x) = \frac{-3(x+3)(x-1)}{(x+6)(x-5)}$$

ZN 1, -3 DN = 2
 ZD 5, -6 DD = 2

GROUP NAME: Math Lovers
 Date: 4/3/14
 Independent Variable (x-axis): _____
 Dependent Variable (y-axis): _____

Student Names (First and Last) _____
 Speaker/Presenter: Barthik
 Writer/Prep: _____
 Leader/Collaborator: _____

Conclusion (in words):
Mid #3

Supporting Work:
Solve the following inequality

3. $\frac{-x-3}{x+4} > 0$

write your answer using interval notation

~~$x < -3$ or $x > -4$~~

~~$x < -3$~~

~~$x > -3$~~

~~$x < -3$~~

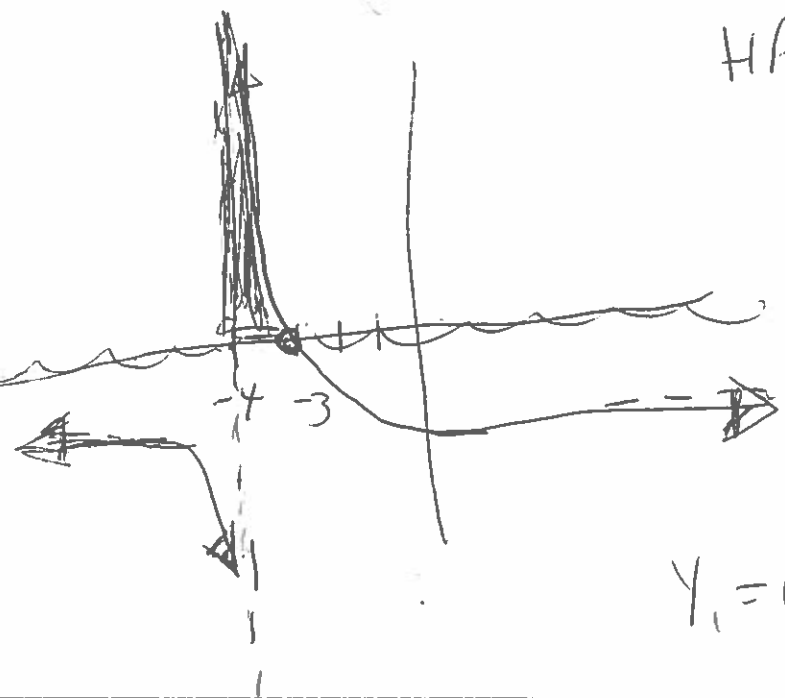
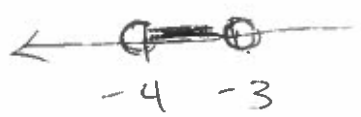
$f(x) = \frac{-x-3}{x+4}$

$ZN: -3$

HA: $y = -1$

$(-4, -3)$

Interval Notation



$Y_1 = (-x-3)/(x+4)$

Hearts
 $(x+4)'$

GROUP NAME: _____

Student Names (First and Last) _____

Date: _____

Speaker/Presenter: _____

Independent Variable (x-axis): _____

Writer/Prep: _____

Dependant Variable (y-axis): _____

Leader/Collaborator: _____

Conclusion (in words):

Mid #4

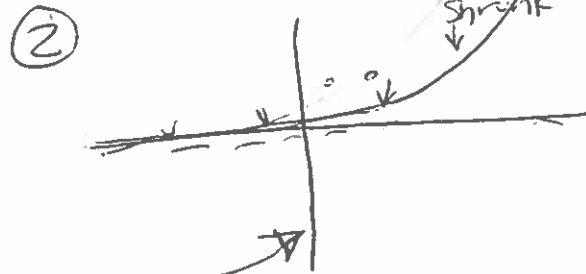
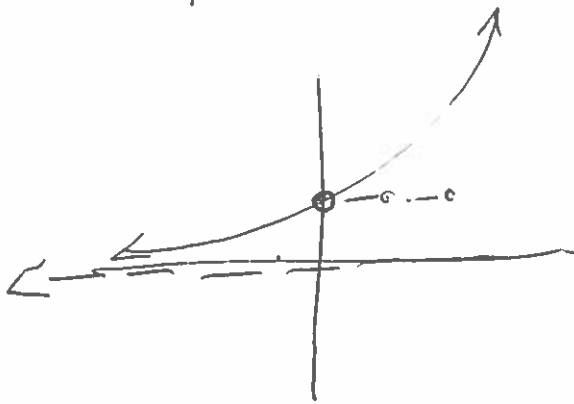
Supporting Work:

Graph $g(x) = \frac{1}{4} e^{x-2} + 4$

Parent: e^x

Words

- ① Right by 2
- ② Shrink by $\frac{1}{4}$
- ③ Up by 4



GROUP NAME:	Student Names (First and Last)
Date: _____	Speaker/Presenter: _____
Independent Variable (x-axis): _____	Writer/Prep: <u>Khrystyna Pavlyuchenko</u>
Dependant Variable (y-axis): _____	Leader/Collaborator: _____

Conclusion (in words):

Mid #5

Supporting Work:

Compounded Interest

~~scribbled out text~~

$P = 4000$

$R = .044$

$T = 4$

$\$400 \cdot (.044) \left(\frac{4}{2}\right) = 704$

470.40

$Q = 4000$

$R = 4.4\% = .044$

Semi-annually

$N = 2$

$T = 4 \text{ yrs}$

$$P = Q \left(1 + \frac{R}{N}\right)^{NT}$$

$$= 4000 \left(1 + \frac{.044}{2}\right)^{2 \cdot 4}$$

$P = 4000 \left(1 + .044/2\right)^{\wedge} (2 \cdot 4)$

\$4760.66

GROUP NAME:

Student Names (First and Last) Noah Unce

Date: _____

Speaker/Presenter: _____

Independent Variable (x-axis): _____

Writer/Prep: _____

Dependant Variable (y-axis): _____

Leader/Collaborator: _____

Conclusion (in words):

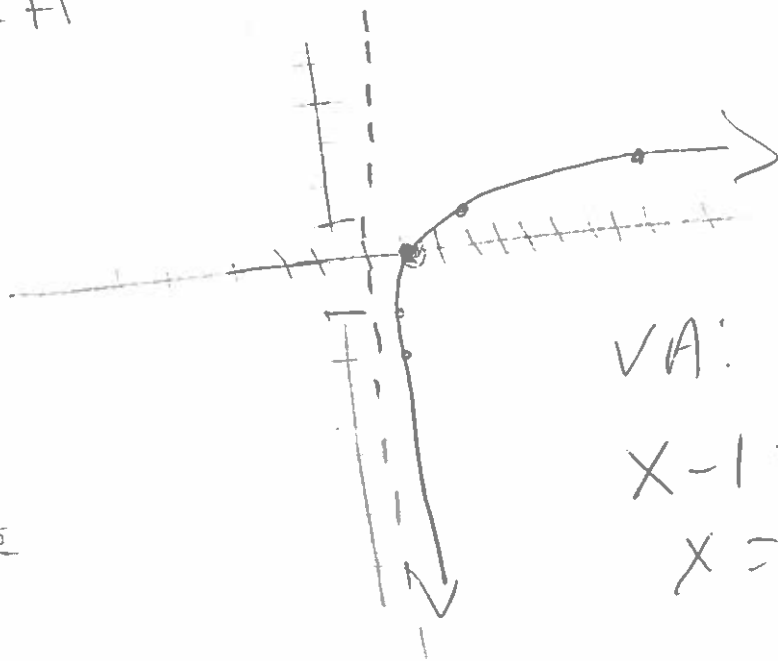
Mid #6

Supporting Work: $g(x) = \log_3(x-1)$
 \hookrightarrow move right 1 time

$y = \log_3 x$

$y = +1$

3^2	9	2
3^1	3	1
3^0	1	0
3^{-1}	$\frac{1}{3}$	-1
3^{-2}	$\frac{1}{9}$	-2



VA:
 $x - 1 = 0$
 $x = 1$

Since you move right 1 time
 Add 1 to the x value

$\frac{1}{9} + 1 \rightarrow$	$\frac{10}{9}$	-2
$\frac{1}{3} + 1 \rightarrow$	$\frac{4}{3}$	-1
$1 + 1 \rightarrow$	2	0
$3 + 1 \rightarrow$	4	1
$9 + 1 \rightarrow$	10	2

$y_1 = \log(x-1) / \log(3)$



D: $(1, \infty)$

R: $(-\infty, \infty)$

$= \ln(x-1) / \ln(3)$ $x=1$

GROUP NAME:	Student Names (First and Last)
Date: <u>3/4/14</u>	Speaker/Presenter: <u>Ricky Wilson</u>
Independent Variable (x-axis): _____	Writer/Prep: _____
Dependant Variable (y-axis): _____	Leader/Collaborator: _____

Conclusion (in words):

Mid #7

Supporting Work:

THE ONE-TO-ONE function f is defined by

$$f(x) = \frac{5x}{-7-6x} \quad \text{Domain: } -7-6x \neq 0$$

Find f^{-1} the inverse of f . Then give the Domain and Range of f^{-1} using interval notation.

$$f(x) = \frac{5x}{-7-6x}$$

$$y = \frac{5x}{-7-6x}$$

Switched x & y ?

$$y = \frac{5x}{-7-6x}$$

~~$$x = \frac{5y}{-7-6y}$$~~

Can't

$$-7y - 6xy = 5x$$

~~multiply~~ divide by "0"

$$-7y = 5x + 6xy$$

$$-7y = x(5 + 6y)$$

~~multiply~~

$$-7y = x$$

~~multiply~~ $(-\infty, -7/6) \cup (-7/6, \infty)$

$$\frac{-7y}{5+6y} = x$$

Domain ~~(-∞, -7/6) ∪ (-7/6, ∞)~~

Range ~~(-∞, -7/6) ∪ (-7/6, ∞)~~

Switch

$$\frac{-7x}{5+6x} = y^{-1}$$

$$x \neq -\frac{5}{6}$$

$$y \neq -7/6$$

GROUP NAME: Elja Amponse
 Date: 04/3/14

Student Names (First and Last)
 Speaker/Presenter: _____

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

Writer/Prep: _____
 Leader/Collaborator: _____

Conclusion (in words):

Mid #8

Supporting Work:

~~6~~

~~Precalculus is a study of functions~~

Precalculus is a study of functions.

Data → Equation

REGRESSIONS

L1	L2
1	3
3	4
5	8

STAT CALC O. Exp
 $y_1 = 2.19 \times 1.277 \dots \Rightarrow y = 7 \text{ mit}$
 Calc 5: Inters $x = 4.373$

GROUP NAME: —

Student Names (First and Last)

Date: 4/3/14

Speaker/Presenter: Zachary Labbanicz

Independent Variable (x-axis): _____

Writer/Prep: Zachary Labbanicz

Dependant Variable (y-axis): _____

Leader/Collaborator: Zachary Labbanicz

Conclusion (in words):

Mid # 9

Supporting Work: Your boss gives you the following equation. Give the vertical and horizontal asymptotes, as well as intercepts.

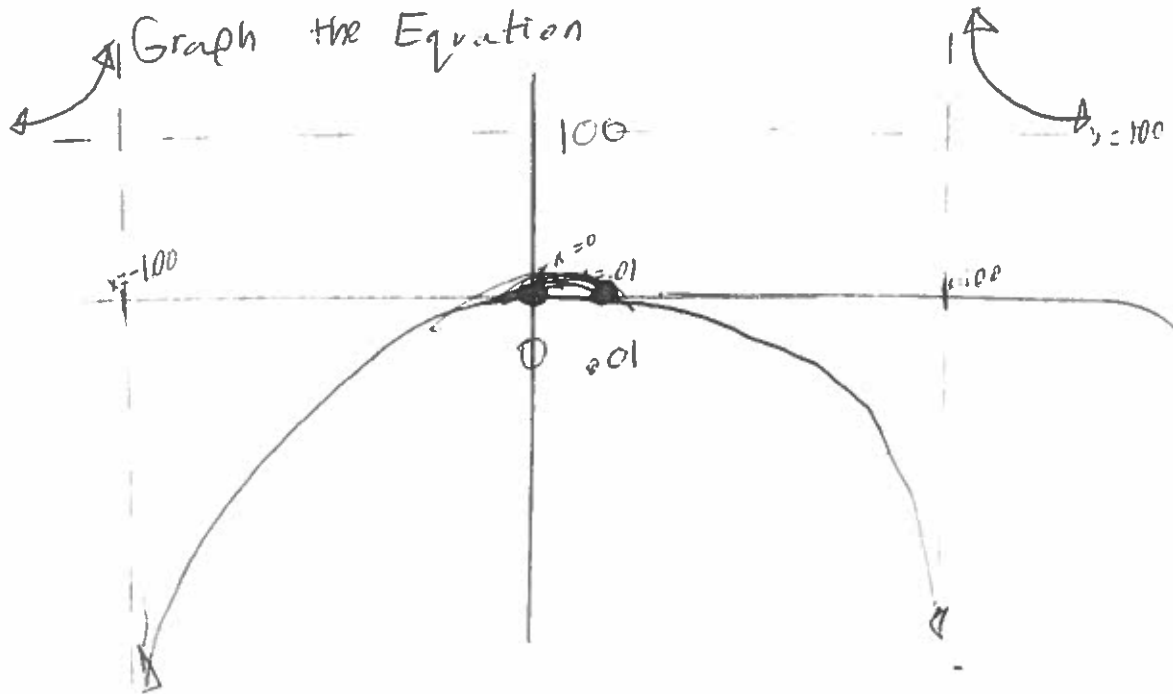
$$S = \frac{100x^2 - x}{x^2 - 10000} = \frac{100x(x - .01)}{(x - 100)(x + 100)}$$

Horizontal: $y = 100$

Vertical: $x = 100$ and $x = -100$ ← ZD

x-Intercepts: $x = .01$ and $x = 0$ ← ZN

Graph the Equation



GROUP NAME:

Student Names (First and Last)

Date: _____

Speaker/Presenter: _____

Independent Variable (x-axis): _____

Writer/Prep: _____

Dependant Variable (y-axis): _____

Leader/Collaborator: _____

Conclusion (in words):

Med #10

Supporting Work:

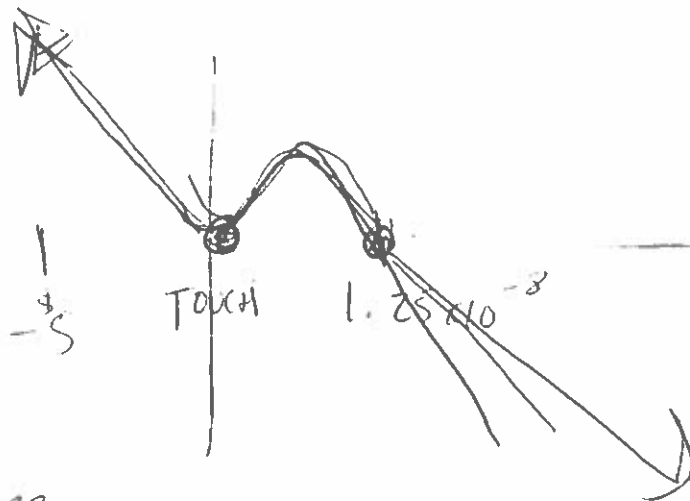
$$R(p) = -250K p^2 (p - 1.25 \times 10^{-8})$$

zero: $p=0$ TOUCHES $p=+1.25 \times 10^{-8}$ Pass Thru

(cubic (3) Neg Lead \ominus) \Rightarrow Discr Left

Positive

$(0, 1.25 \times 10^{-8})$



Imaginary Roots

2, 4, 6 Degree

GROUP NAME:

Student Names (First and Last)

Date: _____

Speaker/Presenter: _____

Independent Variable (x-axis): _____

Writer/Prep: Kevin Leonard

Dependant Variable (y-axis): _____

Leader/Collaborator: _____

Conclusion (in words):

Mid # 11

Supporting Work:

Compounded monthly

$$P = Q \left(1 + \frac{r}{n}\right)^{nt}$$

P = you have

Q = you start

r = rate

t = time

n = Monthly

$$P = 60,000 \left(1 + \frac{0.022}{12}\right)^{12 \cdot 12}$$

$$= 60,000 \left(\frac{6011}{600}\right)^{144}$$

$$= 60,000 (1,302)$$

$$= 78108,81$$

Compounded continuously

$$P = Qe^{rt}$$

$$= 60,000 e^{0.0219 \cdot 12}$$

$$= 60,000 e^{0.2628}$$

$$= 78033,99$$

So the most amount of money you will have after 12 years is monthly 78108,81

GROUP NAME:

Student Names (First and Last)

Date: 4/3/14

Speaker/Presenter: _____

Independent Variable (x-axis): _____

Writer/Prep: Kevin Enriquez

Dependant Variable (y-axis): _____

Leader/Collaborator: _____

Conclusion (in words):

Med #12

Supporting Work:

A Certain radiation amount is shown to have a half-life of 400 hrs. Assuming exponential decay, what is the decay rate?

$$P = Qe^{RT}$$

$$250 = 1000e^{r(400)}$$

$r = -.0034$

Solver ↑

How long will it take 1000 radiation amount to drop to 250?

$$250 = 1000e^{(-.0034 \times t)}$$

$t = 407.73$ hrs

800

How long will it take 1000 amounts to drop to the undetectable amount of .1?

$$.1 = 1000e^{(-.0034 \times t)}$$

$t = 2,703.95$ hrs

Solver →

$P = 50$
 $Q = 100$
 $R = ? \rightarrow -.0017$
 $T = 400$

Math 0: Solver

$$0 = P - Qe^{r(RT)}$$

$P = 500$

$Q = 100$

$R = ?$

$T = 400$

alpha-BAT

$R = -.001$

$= -.01\%$

$P = 250$

$Q = 1000$

$R = -.001$

$T = ?$

Alpha - Enter

$T = 800$

$P = 1$
 $Q = 1000$

$R = -.001$

$T = ?$

Alpha BAT

$T = 5315.08$

<p>GROUP NAME:</p> <p>Date: <u>4/3/14</u></p>	<p>Student Names (First and Last)</p> <p>Speaker/Presenter: <u>Melissa Scarpati</u></p>
<p>Independent Variable (x-axis): _____</p> <p>Dependant Variable (y-axis): _____</p>	<p>Writer/Prep: _____</p> <p>Leader/Collaborator: _____</p>

Conclusion (in words):

Mid #13

Supporting Work:

#13

$$\text{Ex } \log_3(x) + \log_3(x-1) = \log_3(5^2)$$

Property: ~~Product/Sum~~

Ladder Prop (3)

$$\log_3(x) + \log_3(x-1) = 2 \log_3(5)$$

Property: (2) product/sum

$$\log_3((x)(x-1)) = 2 \log_3(5)$$

Property: ~~Product/Sum~~ Algebra

$$\frac{\log_3((x)(x-1))}{\log_3(5)} = 2$$

Property: (4) change of base.

$$\log_5((x)(x-1)) = 2$$

Property: ~~Log of both sides~~ (1) Definition.

$$(x)(x-1) = 25$$

Property: ~~Log of both sides~~ Algebra

$x = 5.5^2$ because can't take log of $\log(-4)$ Neg #

GROUP NAME:

Student Names (First and Last)

Date: _____

Speaker/Presenter: _____

Independent Variable (x-axis): _____

Writer/Prep: _____

Dependant Variable (y-axis): _____

Leader/Collaborator: _____

Conclusion (in words):

Mid #14

Supporting Work:

How tall is a tree that casts a 200 foot shadow along the ground when the sun is at an angle of elevation in 12° ? Give your answers in 2 decimal places



$$\tan = \frac{\text{opp}}{\text{adj}}$$

$$\tan 12^\circ = \frac{x}{200 \text{ ft}}$$

$$200 \tan 12^\circ = x$$

$$\frac{x \approx 42.51 \text{ ft}}{x = 42.51}$$

Determine the value of the 6 trig functions of the value $\left(\frac{5\pi}{4}\right)$

$$\sin^{-.707} \quad \cos^{-.707} \quad \tan \quad 1$$

$$\csc^{-1.414} \quad \sec^{-1.414} \quad \cot \quad 1$$

$$\uparrow$$

$$1/\sin(5\pi/4)$$

GROUP NAME:

Student Names (First and Last)

Date: 4/3/14

Speaker/Presenter: _____

Independent Variable (x-axis): _____

Writer/Prep: Marta Truszkowski

Dependant Variable (y-axis): _____

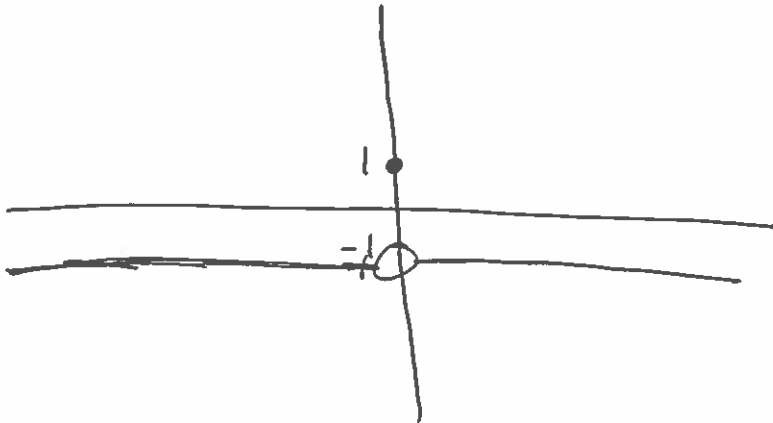
Leader/Collaborator: _____

Conclusion (in words):

 $T1 \neq 1$

Supporting Work:

$$g(x) = \begin{cases} -1 & \text{if } x \neq 0 \\ 1 & \text{if } x = 0 \end{cases}$$



GROUP NAME:

Date: H-3-14

Student Names (First and Last)

Speaker/Presenter: _____

Writer/Prep: LOUIE KENNETH

Independent Variable (x-axis): _____

Dependant Variable (y-axis): _____

Leader/Collaborator: _____

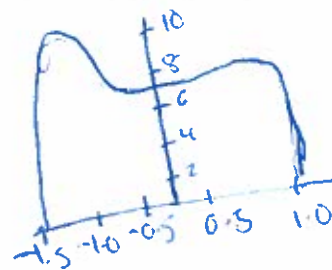
Conclusion (in words):

T1 #2

Supporting Work:

a) $f(x) = 6x^6 - 6x^5 + 3x^2 + 7$

falls to the left and falls to the right



(x from -1.5 to 1)
sad Parabolic
degree even
Negative degree

b) $f(x) = -6x^3 - x^2 - 2x + 1$

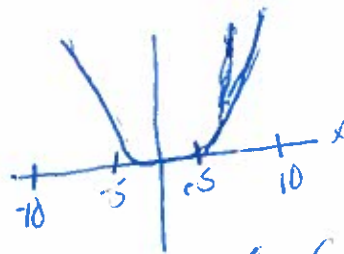
rises to the left, falls to the right
Negative degree



(x from -1 to 1)
Disco left
degree odd

c) $f(x) = 4(x-3)^2(x+2)^2$

Rises to the left and right



(x from -10 to 10)
happy Parabolic

GROUP NAME:

Student Names (First and Last)

Date: 4/3/2014

Speaker/Presenter: _____

Independent Variable (x-axis): _____

Writer/Prep: Li-Yang Lin

Dependant Variable (y-axis): _____

Leader/Collaborator: _____

Conclusion (in words):

T1 #3

Supporting Work:

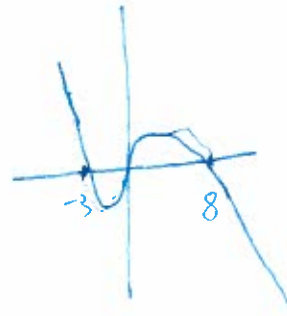
$$f(x) = -2x^3 + 10x^2 + 48x = -2x(x^2 - 5x - 24) = -2x(x-8)(x+3)$$

Degree = 3

Lead = -2

y-intercept: 0

x-intercepts: 0, 8, -3



<p>GROUP NAME: <u>Mark R...</u></p> <p>Date: _____</p>	<p>Student Names (First and Last)</p> <p>Speaker/Presenter: _____</p> <p>Writer/Prep: _____</p> <p>Leader/Collaborator: _____</p>
<p>Independent Variable (x-axis): _____</p> <p>Dependant Variable (y-axis): _____</p>	

Conclusion (in words):

T 1 #4

Supporting Work:

$\sum_{k=0}^n x^k$	$\begin{aligned} &= \frac{x^{n+1} - 1}{x - 1} \\ &= \frac{x^{n+1} - 1}{x - 1} \end{aligned}$	$\begin{aligned} f(x) &= (x+1)x^n - (x^n - 1) \\ &= (x+1)x^n - x^n + 1 \\ &= x^2 + 2x + 1 \end{aligned}$
--------------------	--	--

GROUP NAME:

Date: 4/3/14

Billy Rafferty

Independent Variable (x-axis): _____

Dependant Variable (y-axis): _____

Student Names (First and Last)

Speaker/Presenter: _____

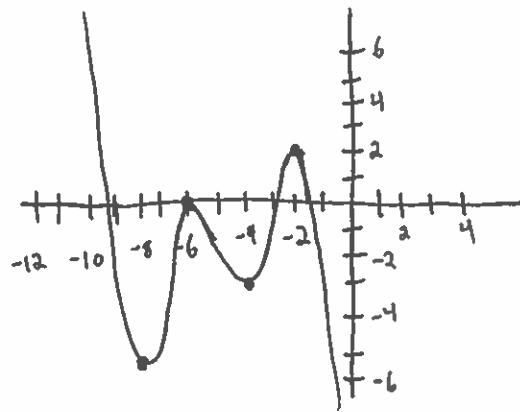
Writer/Prep: _____

Leader/Collaborator: _____

Conclusion (in words):

T1 #5

Supporting Work:



a. The function f is decreasing over which intervals?

$(-\infty, -8)$ $(-6, -4)$ $(-2, \infty)$

b. The function f has local maxima at which x -values?

$-6, -2$

c. What is the sign of the leading coefficient?

Negative, because Disco Left)

d. Which of the following is a possibility for the degree of f ?

4 (5) 6 (7) 8 (9)

You can see 5 faces, but there could be more that are not visible

GROUP NAME:

Student Names (First and Last)

Date: 4-3-14

Speaker/Presenter: Craig Shatto

Independent Variable (x-axis): _____

Writer/Prep: _____

Dependant Variable (y-axis): _____

Leader/Collaborator: _____

Conclusion (in words):

T1 #6

Supporting Work:

$$x^3 - 4x^2 \leq 4x - 16$$

$$x^3 - 4x^2 - 4x + 16 \leq 0$$

$$x^2(x-4) - 4(x-4) \leq 0$$

$$(x^2 - 4)(x-4) \leq 0$$

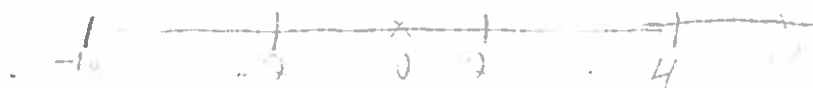
$$(x+2)(x-2)(x-4) \leq 0$$

f(x)

$$x+2 \leq 0 \quad x-2 \leq 0 \quad x-4 \leq 0$$

$$x \leq -2 \quad x \leq 2$$

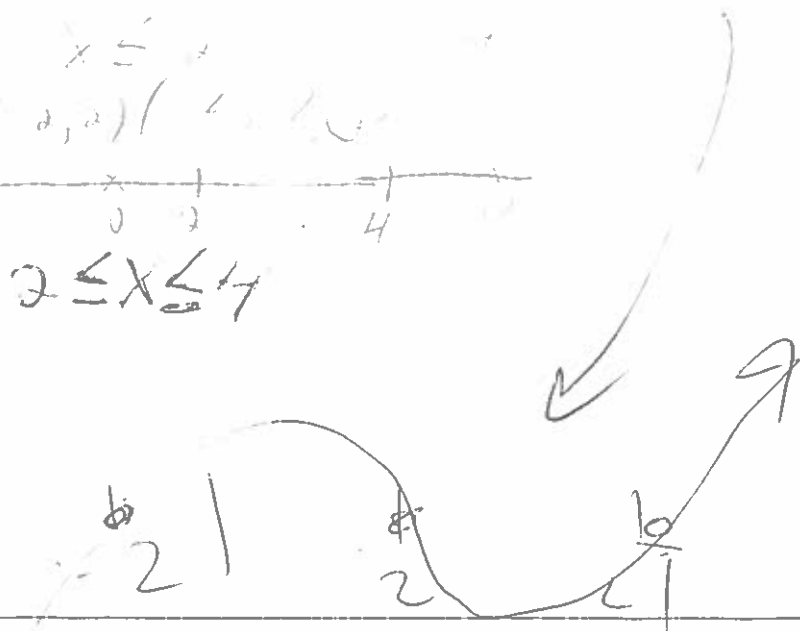
$$(-\infty, -2] \quad [2, 2] \quad [4, \infty)$$



$$x \leq -2 \quad 2 \leq x \leq 4$$

NO

Algebra



GROUP NAME:

Student Names (First and Last)

Date: _____

Speaker/Presenter: _____

Independent Variable (x-axis): _____

Writer/Prep: _____

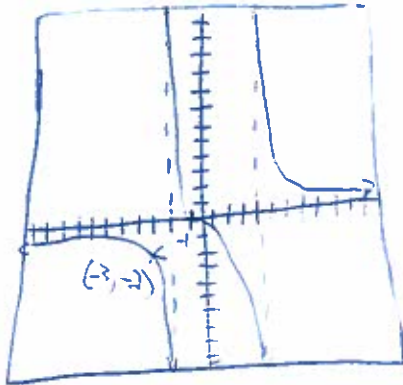
Dependant Variable (y-axis): _____

Leader/Collaborator: _____

Conclusion (in words):

T1 #7

Supporting Work:

Choose the appropriate form for $f(x)$.

$$f(x) = \frac{7(x+1)}{(x+2)(x-4)}$$

<p>GROUP NAME: _____</p> <p>Date: _____</p>	<p>Student Names (First and Last)</p> <p>Speaker/Presenter: <u>Chloed Perry</u></p>
<p>Independent Variable (x-axis): _____</p> <p>Dependant Variable (y-axis): _____</p>	<p>Writer/Prep: _____</p> <p>Leader/Collaborator: _____</p>

Conclusion (in words):

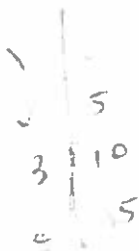
T1 # 8

Supporting Work:

8. What is special about?

The study of numbers

-three sum's examples of different ways you can
 describe n^2



$$f = n^2 + 1$$



GROUP NAME:

Student Names (First and Last) Dorian Thomas

Date: _____

Speaker/Presenter: _____

Independent Variable (x-axis): _____

Writer/Prep: _____

Dependant Variable (y-axis): _____

Leader/Collaborator: _____

Conclusion (in words):

T1 #9

Supporting Work:

<u>L1</u>	<u>L2</u>
60	100
65	125

$$W = 5H - 200$$

$$200 = 5H - 200$$

$$+200 \quad +200$$

$$\frac{400}{5} = \frac{5H}{5} = h = 80$$

$W(H) = W = 5H - 200$
 How much should a person weigh if they are 75" tall?
 Answer: 175 lbs
 How tall should a student who is 200 lbs be?
 Answer: 80" tall

GROUP NAME:

Student Names (First and Last)

Date: 4/3/14

Speaker/Presenter: Zohoo Baaganjev

Independent Variable (x-axis): _____

Writer/Prep: _____

Dependant Variable (y-axis): _____

Leader/Collaborator: _____

Conclusion (in words):

71 #10

Supporting Work:

STAT → EDIT 1:

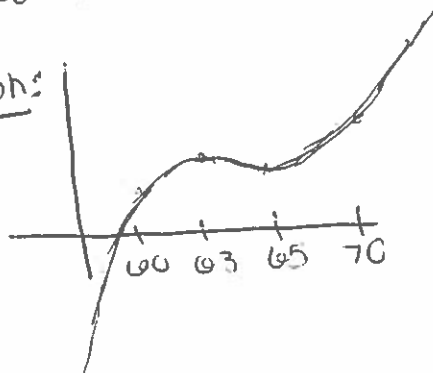
L1	L2
60	100
65	125
63	140
70	200

STAT 2) CALC 6: CUBIC REG

$$y = ax^3 + bx^2 + cx + d$$

Cubic: $w(H) = .73...x^3 + -142.92...x^2 + 9216.90...x + -197..$

Graph:



Zero for cubic reg.

CALC 2:

leftbound = 57

rightbound = 60

$$x = 58.24$$