Your unit 3 Test is tomorrow.

The homework for this week is online. It was sent out via Remind. If you have not signed up for Remind, here is the code for you to do so
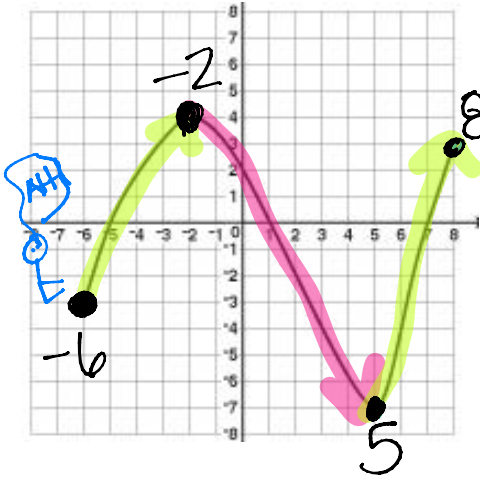
Text 81010 with the subject @nicforr2

If you do not have a phone, I have paper copies but I only have enough for you to have one.

While I am passing out the quizzes from last week, start the review. If you can do the review, you should ACE the test!

1) Answer all the questions to the right to the best of your ability. Be sure you use your flipbook if you are still stuck!

| Domain $[-6, 8]$	Range $[-7, 4]$
x-intercept(s) $(7,0)\ (-5,0)\ (1,0)$	y-intercept $(0,2)$
Absolute max: $(-2,4)$	Absolute min: $(5,-7)$
Relative max: $(8,3)$	Relative min: $(-6,-3)$
Increasing: $(-6,-2)\ (5,8)$	Decreasing: $(-2,5)$
Constant: none	End behavior: none
Function? yes	Continuous? Discrete? Discontinuous?

2)

a. $f(0) =$ 3 $x=0$

b. $f(1) =$ -0.5 $x=1$

c. $f(-2) =$ 4 $x=-2$

d. $f(2) =$ -1 $x=2$
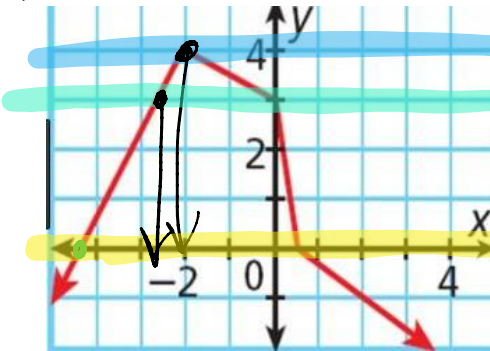
e. $f(x) = 4, x =$ -2 $y=4$

f. $f(x) = 0, x =$ -4.5 & 0.5 $y=0$

g. $f(x) = 3, x =$ 0 & -2.5 $y=3$

3) Tell if the following are functions or not. **Explain** how you know if it is or not? Use words here!
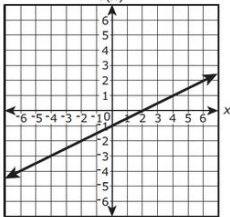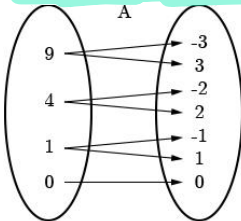
d. Jenny is watching her credit card bill. Each month she pays $500 to it but then charges another $600 to it.

a. Yes, pass vert. Line test

b. No, x-values repeat 2 arrows from every X

c. yes, no x values repeat

d. $\dfrac{X\ |\ Y}{}$ No→X values will repeat

4) The average salary of a garbage man (in thousands) from 1985 to 2001 is represented by the function
$f(x) = 145x + 192$ where **x** is the **number** of **years** since 1985.

a. Find the value of **f(5)**. **Explain** what the number means in terms of the problem.

$145(5) + 192 = 917$ In 5 yrs from 1985 (1990), a garbage man's salary is $917,000.

b. Find the value of **x** when **f(x) = 1000**. **Explain** what this means in terms of the problem.

$145x + 192 = 1000$ $145x = 808$ $x = 5.6$ yrs   In 5.6 yrs, a garbage man makes $1,000,000.
$\quad\quad -192 \quad -192$ $\dfrac{145x}{145} = \dfrac{808}{145}$

c. Find the value of **f(10)**. **Explain** what the number means in terms of the problem.

$145(10) + 192 = 1642$ In 10 yrs from 1985, a garbage man makes $1,642,000.

d. Find the value of **x** when **f(x) = 1500**. **Explain** what this means in terms of the problem.

$145x + 192 = 1500$ $145x = 1308$ $x = 9$ In 9 yrs from 1985, a garbage man makes $1,500,000.
$\quad\quad -192 \quad -192$ $\dfrac{145x}{145} = \dfrac{1308}{145}$

5) Given $f(x) = -10x - 9$ and $j(x) = 7x + 4$ answer the following.

a. f(x) + j(x)	b. f(0) + j(2)	c. j(-3) – f(-3)	d. j(x) – f(x)
$-10x - 9 + 7x + 4$ $\boxed{-3x - 5}$	$x = 0 \quad\quad x = 2$ $-10(0) - 9 \quad 7(2)$ $-9 + 18$ $\boxed{9}$	$x = -3 \quad\quad x = -3$ $7(-3) + 4 \quad -10(-3) - 9$ $-17 \quad\quad 21$ $\boxed{-38}$	$7x + 4 - (-10x - 9)$ $7x + 4 + 10x + 9$ $\boxed{17x + 13}$

6) Write **out** all the **definitions** for the following words.

a. Domain   b. Range   c. x-intercept   d. y-intercept

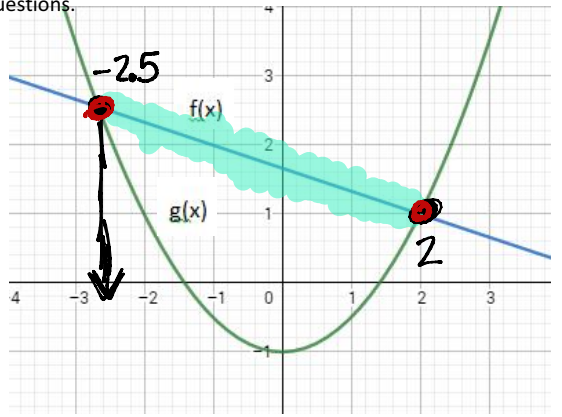e. Absolute max   f. Absolute min   g. Relative max   h. Relative min
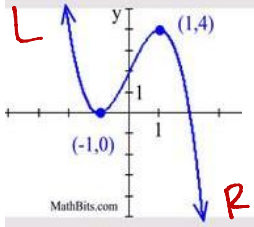
j. End behavior   k. Constant   m. Increasing   n. Decreasing

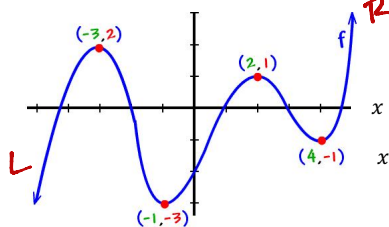7) Given the following graph, answer the following questions.

a. When is f(x) > g(x)? —f(x) top above

(-2.5, 2)

-2.5

f(x)

g(x)

b. Where is f(x) = g(x)?

(2,1) (-2.5, 2.5)
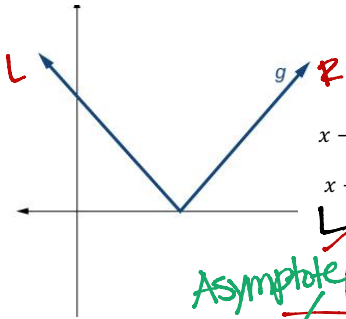
2

c. What is the value of f(2) + g(0)?

1 + -1 = 0

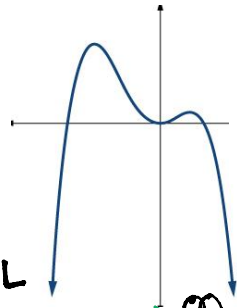8) Label the end behavior for the following graphs. Be sure you watch your negatives and positives.

L (1,4)

(-1,0)

MathBits.com

R

L
$x \to -\infty, \ y \to \infty$

$x \to \infty, \ y \to -\infty$

L R

R

(-3,2)

(2,1)

(4,-1)

(-1,-3)

f

R

L
$x \to -\infty, \ y \to -\infty$

$x \to \infty, \ y \to \infty$

R

L

g R

$x \to -\infty, \ y \to \frac{\infty}{\infty}$

$x \to \infty, \ y \to \frac{\infty}{\infty}$

L

Asymptote

-4

R

$x \to -\infty, \ y \to \frac{-\infty}{\infty}$

$x \to \infty, \ y \to \frac{-\infty}{\infty}$

L

f

$x \to -\infty \quad y \to \infty$

$x \to \infty \quad y \to -4$
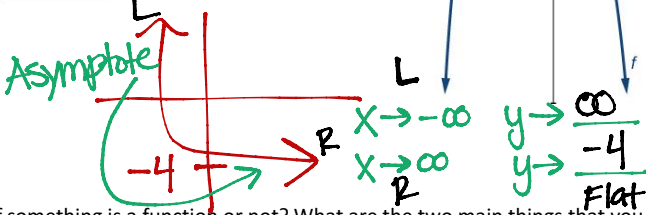
R   Flat

9) How do you know if something is a function or not? What are the two main things that you need to test/know in order to prove something a function or not?

X values cannot repeat

pass VLT

each X only goes to one

Only crosses y-axis once