Welcome to Dr. Gammill's Math Class

1. Find your seat.
2. Make sure you have your registration materials handy.

Aug 7-12:31 AM

Folder

1. If there is a different name you'd like me to use, update the folder below your name.
2. Inside the folder on the left side, indicate the following:

a) What extra curricular activities are you (or will you be) involved in this semester?

b) Who is your homeroom teacher? + Grade

c) Write 2 sentences telling me a little more about yourself... This could be anything.

d) What is YOUR email address in case I need to contact you.

Tell me more...

Take a few minutes to decorate your folder using quotes or drawings. You could include ideas include music, sports, foreign languages or favorite vacation spots, jobs, cars, favorite colleges, other interests.

Aug 7-10:10 AM

Class Policies

Take a minute to look over the policy sheet.
Let's talk about it. What types of questions do you have?

0:06:00

Aug 7-10:15 AM

Rewind - Day 1

0:00:00

1 & 12 2 & 6 3 & 4

1) Find all the pairs of factors of 12.

3x2x2

2) Find all the prime factors of 12. Tree

12

3) What is the least common multiple of 4 and 6?

6

4) What is the greatest common factor of 12 and 30?

12
6 2
3 2

Let's talk about number systems. The different number systems include:

Natural $1, 2, 3, \ldots$

Whole $0, 1, 2, 3 \ldots$

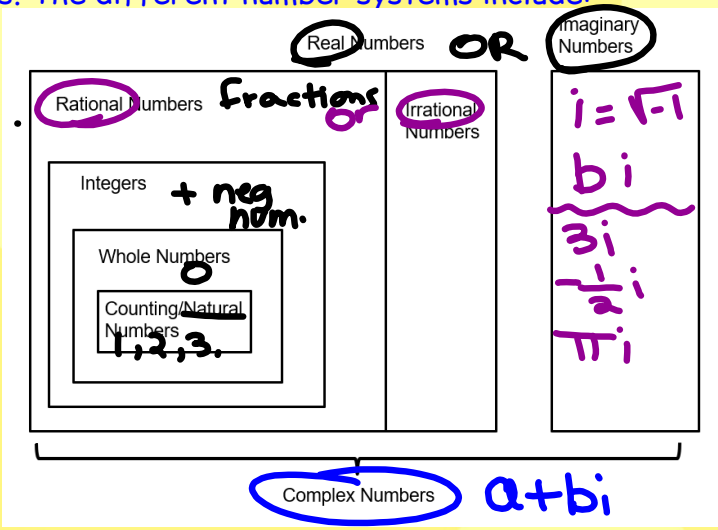
Integers $0, \pm 1, \pm 2, \pm 3, \ldots$

Rational $\frac{a}{b}$ $\frac{1}{2}, .3$ $.333\ldots = \frac{1}{3}$

Irrational $\pi, e, \sqrt{\text{prime}}$ $2.719\ldots$

Imaginary $7i$ $\frac{1}{2}i$ πi $.97\ldots i$

Complex $a+bi$ $7+2i$ $0+5i$ $7-0i$



Practice Protocol:

1) Put your name clearly at the top of your board. Write your work and answers large enough so that someone across the room CAN READ your work.
2) **Everyone** gets a board, eraser, and marker.
3) We work one problem at a time. If you get done early, help others or check your work. Put your back to the wall when you are finished.
4) It is not cheating to work with your classmates after you finish.
5) When I say stop, CAP YOUR MARKER TIGHTLY and erase your work for the next class. Return materials.

Warm Ups: One or two problems will be given everyday as a warm-up. I will take attendance in this manner by looking to see who is finished or by his/her respective board.

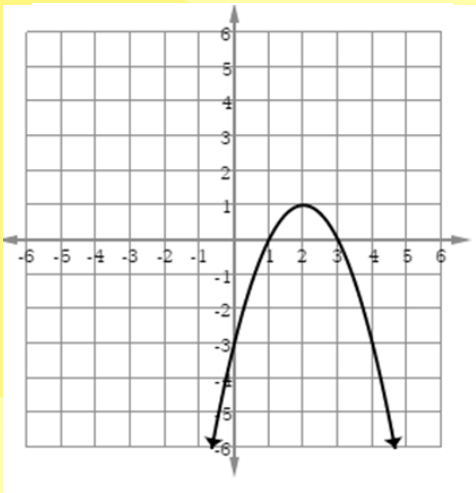
We will also use the boards for ticket out the doors.

List the first number set that contains the following...

-2

0

Board Work:
State the domain and range. List the intervals of increase and decrease.



Domain: _____
Range: _____
Increasing: _____
Decreasing: _____

Notes

Into which groups does each number go?

	Natural	Whole	Integer	Rational OR	Irrational	Real OR	Imaginary	Complex
-8								✓
0								✓
$\sqrt{5}$								✓
3+2i								✓
$\frac{7}{4}$								✓
$\sqrt{9}$								✓
7i								✓

Either copy this chart and fill it in, or use the graphic organizer and place the numbers where you think they would go.

Rewind - Day 2

Rational, Irrational, or Complex?

1) .5i

2) -47

3) $\sqrt{23}$

Challenge

What is a number that belongs in the whole numbers that is not in the natural numbers?

Into which groups does each number go?

	Natural	Whole	Integer	Rational	Irrational	Real	Imaginary	Complex
-8			☺	☺		☺		☺
0		☺	☺	☺		☺		☺
$\sqrt{5}$					☺	☺		☺
3+2i								☺
$\frac{7}{4}$				☺		☺		☺
$\sqrt{9}$	☺	☺	☺	☺		☺		☺
7i							☺	☺

In case you missed it yesterday. ...

Now some notes.

We will write sets of numbers using INTERVAL NOTATION.

Domain is your x-values. Graphically, read **Domain** from left to right.
- Questions to ask: How far left Does it go? How far right Does it go?

Range is your y-values. Graphically, read **Range** from bottom to top.
- Questions to ask: How far down Does it go? How far up Does it go?

INCREASING is where the graph rises from Left to Right

DECREASING is where the graph falls from Left to Right

Constant: → Flat line

***NOTE: You read **INC & DEC** in terms of x values NOT in terms of y values

Other Vocabulary to know.

Point

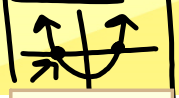
Y-intercept (0,b)

Extrema (turning point) (x,y)

Vertex (h,k)

x: value

Solutions
x-value where it crosses x-axis



=tion

Axis of Symmetry
x=h

End Behavior

x→-∞, f(x)→ —
x→∞, f(x)→ —

1.

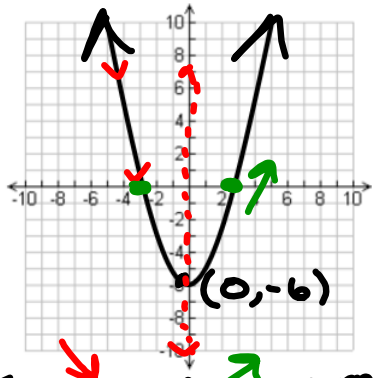
a. Domain: (-∞,∞) b. Range: [-6,∞)

c. Extrema: (0,-6) d. Axis of Sym: x = 0

e. Increasing: (0,∞) f. Decreasing: (-∞,0)

g. Y-Intercept: (0,-6) h. Solutions: x = -3, 3
x = ±3

i. End Behavior: $x \to -\infty$ $f(x) \to$ ∞
$x \to +\infty$ $f(x) \to$ ∞



2.

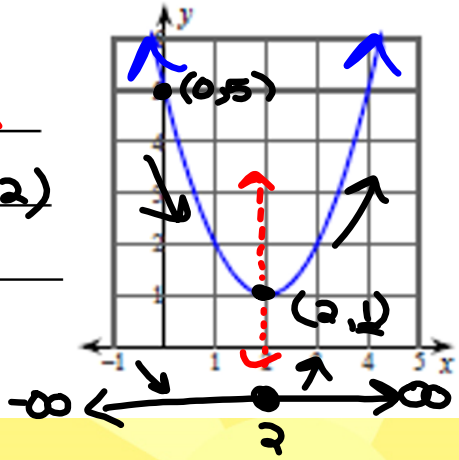
a. Domain: $(-\infty, \infty)$ b. Range: $[1, \infty)$

c. Extrema: $(2, 1)$ d. Axis of Sym: $x = 2$

e. Increasing: $(2, \infty)$ g. Decreasing: $(-\infty, 2)$

g. Y-Intercept: $(0, 5)$ h. Solutions: none

i. End Behavior: $x \to -\infty$ $f(x) \to \infty$
$x \to +\infty$ $f(x) \to \infty$



3.

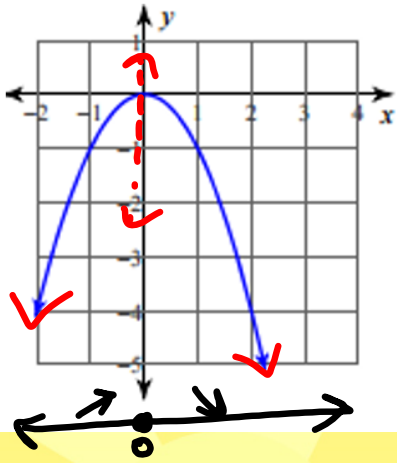
a. Domain: $(-\infty, \infty)$ b. Range: $(-\infty, 0]$

c. Extrema: $(0, 0)$ d. Axis of Sym: $x = 0$

e. Increasing: $(-\infty, 0)$ h. Decreasing: $(0, \infty)$

g. Y-Intercept: $(0, 0)$ h. Solutions: $x = 0$

i. End Behavior: $x \to -\infty$ $f(x) \to -\infty$
$x \to +\infty$ $f(x) \to -\infty$



Board Work...

$f(x) = x^2 - 8x + 19$

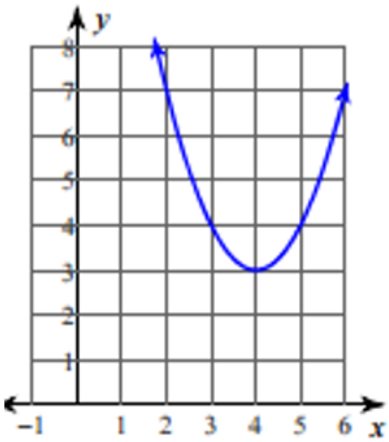
a. Domain: _____ b. Range: _____

c. Extrema: _____ d. Axis of Sym: _____

e. Increasing: _____ i. Decreasing: _____

g. Y-Intercept: _____ h. Solutions: _____

j. End Behavior: $x \to -\infty$ $f(x) \to$ _____
$x \to +\infty$ $f(x) \to$ _____



$f(x) = -2x^2 + 16x - 30$

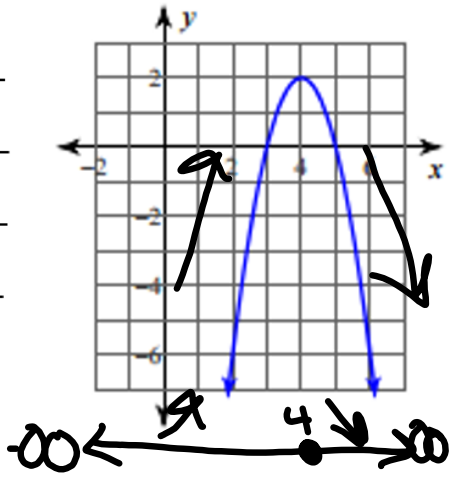
a. Domain: _____ b. Range: _____

c. Extrema: _____ d. Axis of Sym: _____

e. Increasing: _____ f. Decreasing: _____

g. Y-Intercept: _____ h. Solutions: _____

i. End Behavior: $x \to -\infty$ $f(x) \to$ _____
$x \to +\infty$ $f(x) \to$ _____



$f(x) = -x^2 - 12x - 32$

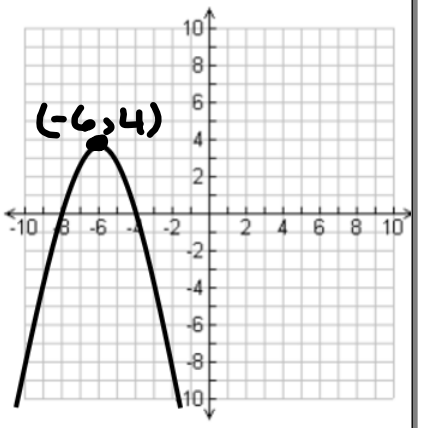
a. Domain: _____ b. Range: _____

c. Extrema: _____ d. Axis of Sym: _____

e. Increasing: _____ f. Decreasing: _____

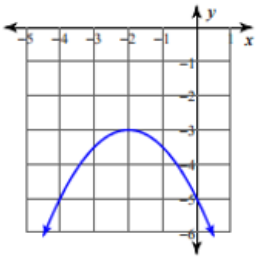
g. Y-Intercept: _____ h. Solutions: _____

i. End Behavior: $x \to -\infty$ $f(x) \to$ _____
$x \to +\infty$ $f(x) \to$ _____



Back to the desks...

Find the domain and range and intervals of increasing and decreasing.

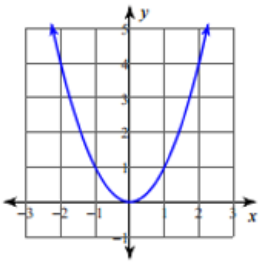


D = _____

R = _____

Inc = _____

Dec = _____

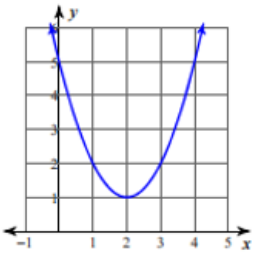


D = _____

R = _____

Inc = _____

Dec = _____

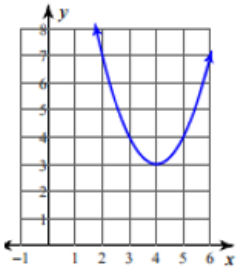


D= _____

R = _____

Inc = _____

Dec = _____

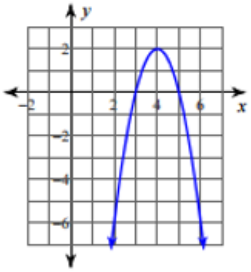


D = _____

R = _____

Inc = _____

Dec = _____

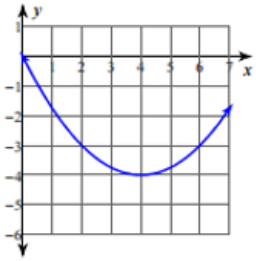


D = _____

R = _____

Inc = _____

Dec = _____



D= _____

R = _____

Inc = _____

Dec = _____

Into which group does each number go?

	Natural	Whole	Integers	Rational	Irrational	Real	Imaginary	Complex
22.5								
3/8								
$\sqrt[3]{14}$								
4-7i								
13i								
-18								
$\sqrt{-18}$								
2i-18.4								
0								
9/4