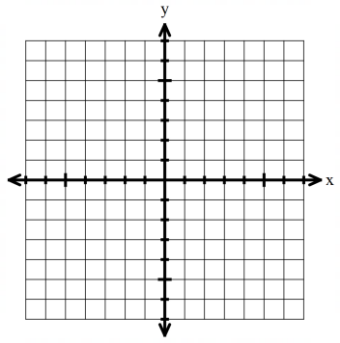
PreCalculus with TRIG – Unit 1 – Review of Algebra 2

Day 1 – Section 1.6 & 1.7 – Review of Transformations and Graphs

Objectives: SWBAT translate Functions, SWBAT parts of graphs

Review Questions of the day:

1) Graph $y = -(x+2)^2$



2a) Find the domain of $y = \log(x-2) + 3$

2b) What are the translations take place

Transformations of Functions: **(h, k) format**

Rules of Transformations of Functions	
$f(x)+c$	**Shift $f(x)$ upward "c" units**
$f(x)-c$	**Shift $f(x)$ downward "c" units**
$f(x+c)$	**Shift $f(x)$ to the left "c" units**
$f(x-c)$	**Shift $f(x)$ to the right "c" units**
$-f(x)$	**Reflect $f(x)$ over the x-axis**
$f(-x)$	**Reflect $f(x)$ over the y-axis**
$a \cdot f(x)$, $a > 1$	**Stretch $f(x)$ vertically by a factor of "a"**
$a \cdot f(x)$, $0 < a < 1$	**Shrink $f(x)$ vertically by a factor of "a"**
$f(ax)$, $a > 1$	**Shrink $f(x)$ horizontally by a factor of "$\frac{1}{a}$"**
$f(ax)$, $0 < a < 1$	**Stretch $f(x)$ horizontally by a factor of "$\frac{1}{a}$"**

Parent Function Symbols			
( )	[ ]	∩	∪

Function Properties		
Odd	**Even**	**Neither**

Parent Functions

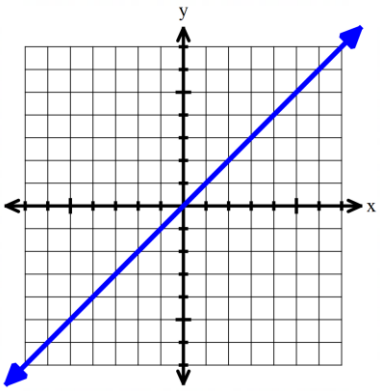
Linear

$y = x$

odd

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

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



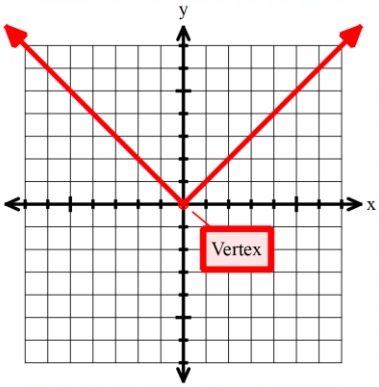
Absolute Value

$y = |x|$

even

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

Range:
$[0, \infty)$



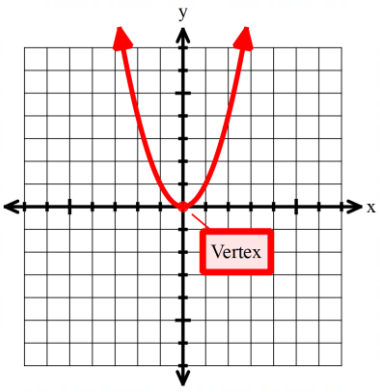
Quadratic

$y = x^2$

even

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

Range:
$[0, \infty)$



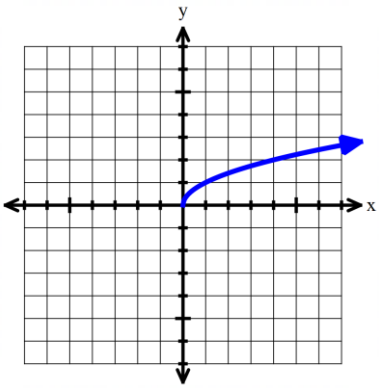
Square Root

$y = \sqrt{x}$

neither

Domain:
$[0, \infty)$

Range:
$[0, \infty)$



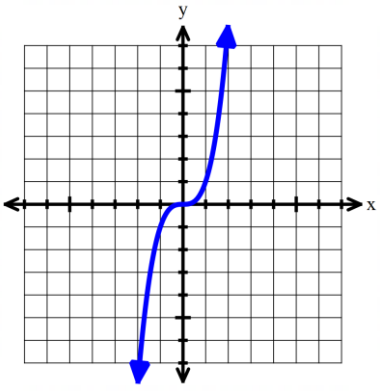
Cubic

$y = x^3$

odd

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

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



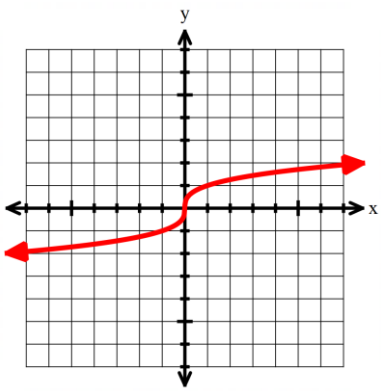
Cube Root

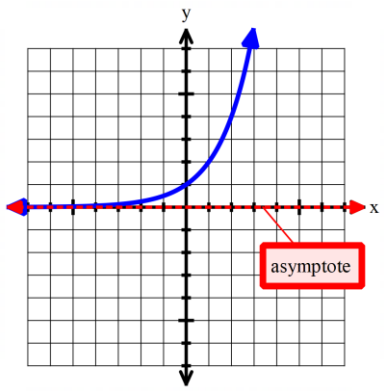
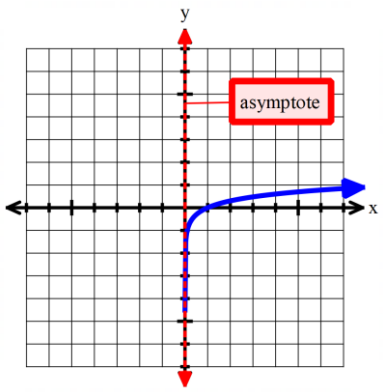
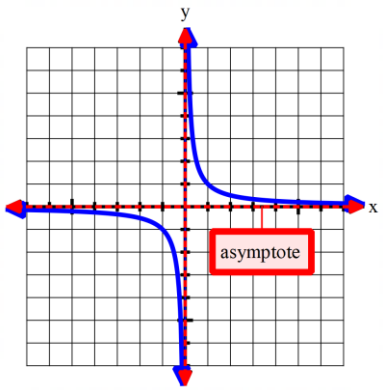
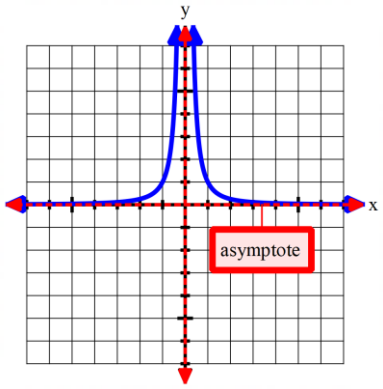
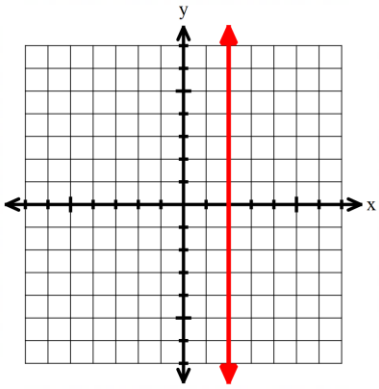
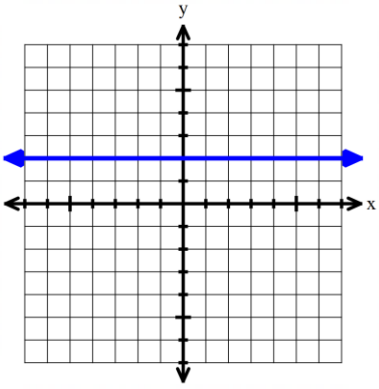
$y = \sqrt[3]{x}$

odd

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

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



Exponential $y = b^x, b > 1$ neither **Domain:** $(-\infty, \infty)$ **Range:** $(0, \infty)$		**Logarithmic** $y = log_b(x), b > 1$ neither **Domain:** $(0, \infty)$ **Range:** $(-\infty, \infty)$	
Rational $y = \frac{1}{x}, x \neq 0$ neither **Domain:** $(-\infty, 0) \cup (0, \infty)$ **Range:** $(-\infty, 0) \cup (0, \infty)$		**Inverse Squared** $y = \frac{1}{x^2}, x \neq 0$ even **Domain:** $(-\infty, 0) \cup (0, \infty)$ **Range:** $(0, \infty)$	
Constant Function $x = c$ neither **Domain:** $\{x: x = c\}$ **Range:** $(-\infty, \infty)$		**Constant Function** $y = c$ even **Domain:** $(-\infty, \infty)$ **Range:** $\{y: y = c\}$	

Describe the transformations for the following functions.

1. $y = -\sqrt{3x - 5} + 7$

a. $y = (3 - x)^3 - \pi$

Write the center or vertex of the graph of each equation.

2. $y = (-x - 3)^2 + 1$

3. $y = \sqrt[3]{x + 6} - 8$

b. $y = (x - 4)^3 + 13$

4. $y = log(2x - 1) + 6$

Day 2 – Section 1.7A & 1.8 – Compositional Functions and Inverses

Objectives: SWBAT perform function operations, and find the domain of the new function. SWBAT find inverses of functions.

Review Questions of the day:

1) Find $f(-4)$ *given* $f(x) = \sqrt{x}$

2) Describe what makes an equation a function.

Composition Functions

Notation: $f(g(x))$ $f \circ g$ $h(f(g(x)))$ $g\left(f\left(1\right)\right)$

Domain of a Function

When is the domain not $\mathbb{R}$?

Given: $f(x) = x^2 + 1$, $g(x) = 2x - 3$, $h(x) = x + 7$ **Find the following**

1. $g(f(1))$ **2.** $f(g(x))$ **a.** $h(g(x))$ **b.** $f(g(h(0)))$

Given: $f(x) = x - 5$, $g(x) = x^2 - 25$, $h(x) = \sqrt{x}$, $j(x) = \frac{3}{x}$, **find the following, and define the domain of the new function**

3. $f(x)/g(x)$ **4.** $h(f(x))$ **c.** $f(x) \cdot g(x)$ **d.** $j(h(x))$

Find the domain of each function.

5. $f(x) = \sqrt{x+1}$ **6.** $g(x) = \frac{2}{\frac{3}{x}+1}$ **e.** $g(x) = \log(x-9)$ **f.** $\frac{2}{x^2-6x+5}$

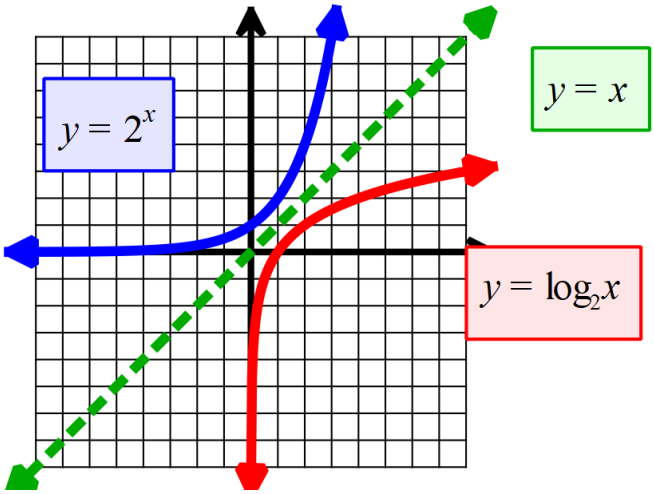
For each of the following, write the given function r(x) as a composition of the following functions. $f(x) = log(x)$ $h(x) = \sqrt{x}$ $k(x) = ln(x)$ $g(x) = 5x - 9$ $j(x) = \frac{2}{x}$

7. $r(x) = log(5x - 9)$ **8.** $r(x) = \frac{4}{ln(x+5)}$ **g.** $r(x) = \sqrt{10x - 18}$

For each of the functions below r(x), write as a composition of two functions (and state those functions).

9. $r(x) = (2x + 4)^3 + 7$ **10.** $r(x) = \sqrt[3]{x-4} + 1$ **h.** $r(x) = \frac{4}{ln(x+5)}$

Inverse Relationship:



Inverse Function Notation:

Inverse Power Functions:

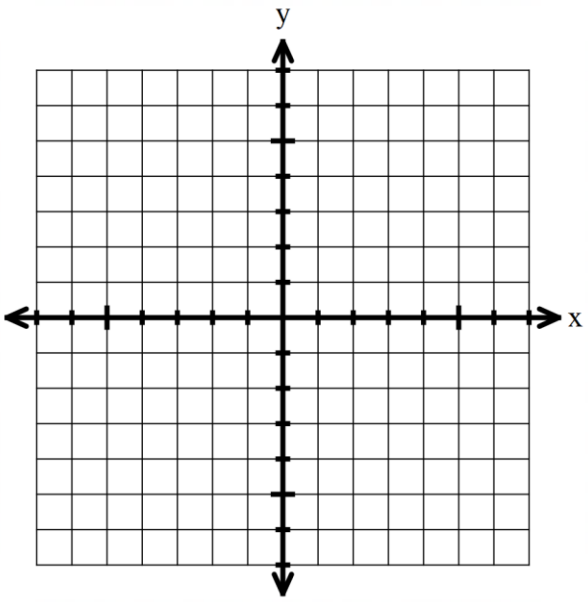
Verify an Inverse Function:

$$f\left(f^{-1}(x)\right) = x$$

Find the inverses of each of the following function. State whether the inverse is a function.

11. $f(x) = 3x - 2$ **12.** $h(x) = (x-1)^2 - 4$ **13.** $y = ln(x+8)$ **i.** $g(x) = \frac{5}{x}$

Graph both $f(x) = (x-2)^3 - 1$ and its inverse on the same axes. Use two colors, label the functions, and show the line of symmetry.



Day 3 – Section 1.10 – Math Modeling

Objectives: SWBAT model real life situations with functions

Review Questions of the day:

1) What is the solution to the system? $\begin{aligned} 3x - 10y &= 8 \\ 2x + 5y &= 10 \end{aligned}$

2) If you would like to model the volume of a rectangular solid, what type of polynomial would you most likely be the best choice?

A) Linear **B)** Quadratic **C)** Cubic **D)** Quartic **E)** Exponential

Real Life Examples of the following Graphs		
Linear	**Quadratic**	**Exponential**

1. Simple Interest Modeling: You inherit $45,000.00 with the stipulation that for the first year, the money must be placed in two investments expected to pay 5% and 6% annual interest. Express the expected interest, I, as a function of the money invested at 5%, x.

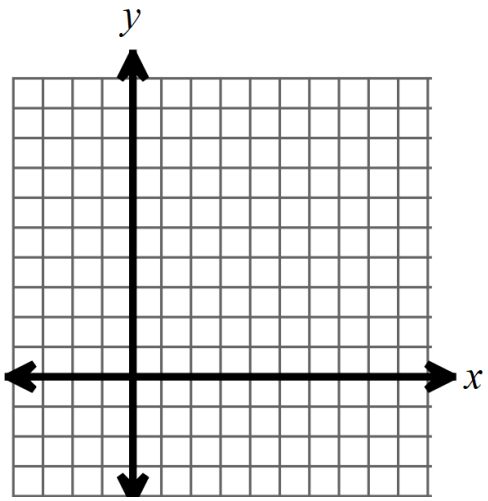
2. Cell Phone Plans: If AP&P provided you with a plan that costs $85 a month with unlimited monthly texts, and Perizon provides you with a plan that costs $45 a month with 500 allowable monthly texts, and $0.10 per text after that.

I. Write a function for each plan.

II. For how many monthly texts will the cell phone plans cost be equal?

III. Show this graphically using your graphing calculator.

IV. Based on your personal texting needs, which plan should you choose and why?



2. Geometric Modeling: If a typical 12oz. soda can has a volume of approximately 22 cubic inches. Express the surface area of a can, SA, in square inches, as a function of ids radius, r, in inches.

4. Finding Volume: A custom box company comes to you and tells you that they can make your box the following dimensions: x by $(14 - 2x)$ by $(12 - 2x)$. Use a graphing calculator to find the maximum volume? What is the minimum volume?

5. Graph the function $A(x) = x(100 - x)$ where $A(x)$ is the area of a rectangle. What would x mean in this example?

Graphing the function, what would the vertex mean?

Day 4 – Section 2.2 – Graphing Quadratic Functions

Objectives: **SWBAT identify the parts of Quadratic Functions. SWBAT will be able to switch forms of Quadratic Functions.**

Review Questions of the day:

1. Explain what the axis of symmetry is?

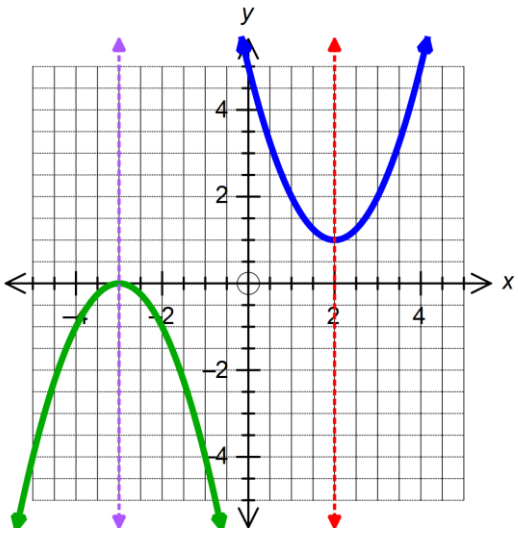
2. What is the vertex of $f(x) = -5(x + 2)^2 + 9$

3. What is the formula for the x-coordinate of the vertex of a quadratic model given in standard form $y = ax^2 + bx + c$?

Quadratic Function

Parabola

Vertex **Min** **Max**



Axis of Symmetry

y – Intercept

Zeros

	Standard Form	Vertex Form	Intercept Form (Factored Form)
What does it look like?			
How do I get it?			
How do I change to Vertex Form?			

Find the vertex for each of the following. Then, tell whether the function has a max or a min.

1. $f(x) = 13(x+2)^2 - 9$

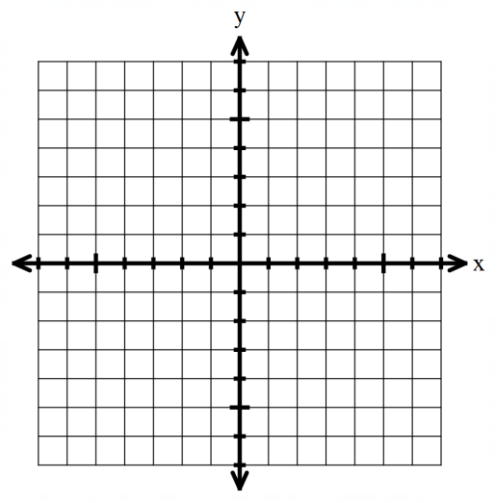
2. $g(x) = -3x^2 + 12x - 7$

a. $f(x) = -7(x-8)^2 + 11$

b. $y = (x-14)(x+6)$

For each of the following functions, state the vertex (max or min), and state the domain/range.

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

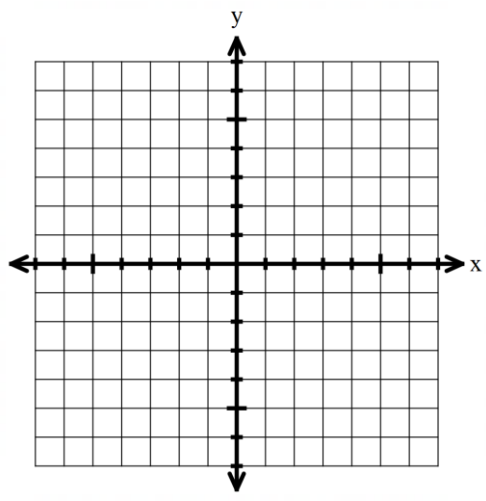


Vertex: _____ **Max / Min**

Domain: _____

Range: _____

4. $g(x) = -2(x+1)(x-3)$

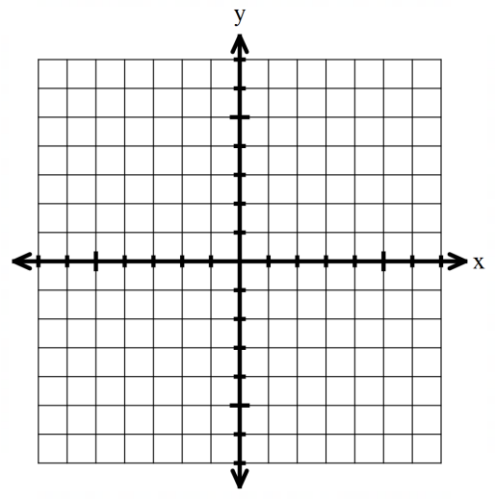


Vertex: _____ **Max / Min**

Domain: _____

Range: _____

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

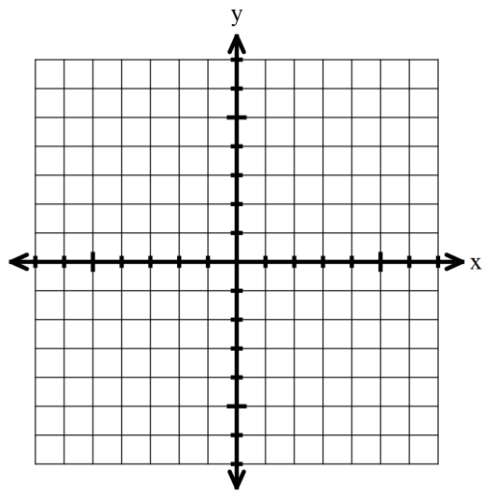


Vertex: _____ **Max / Min**

Domain: _____

Range: _____

d. $g(x) = 4x^2 - 8x + 1$



Vertex: _____ **Max / Min**

Domain: _____

Range: _____

5. Find the max or min value of $g(x) = 14x^2 - 14x$.

6. Write an equation in standard form that looks like $v(x) = 3x^2$ (same steepness) but has a vertex of $(14, 14)$.

Day 5 – Section 2.3 – Polynomial Functions, Graphs, and End Behavior

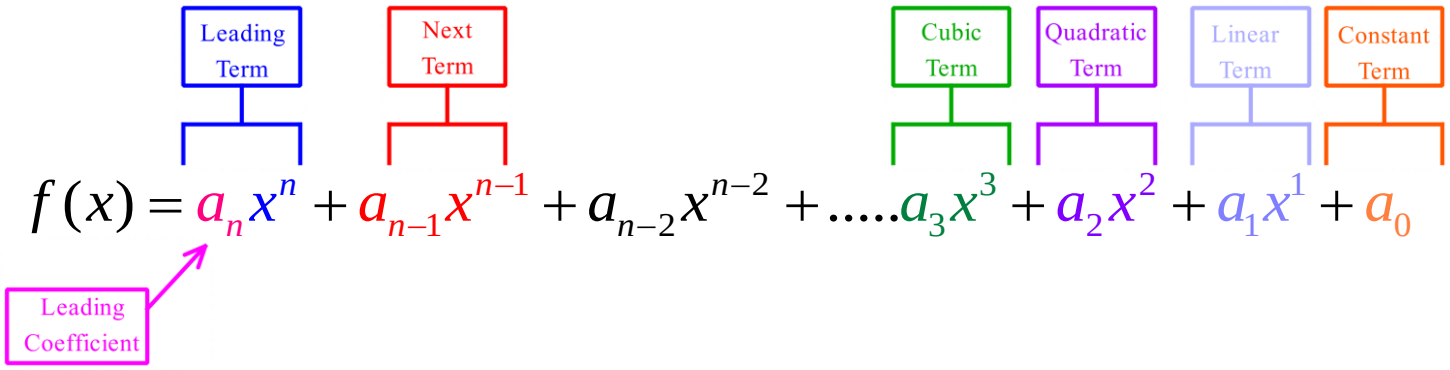
Objectives: **SWBAT identify polynomials. SWBAT find End behavior, and name the multiplicity of zeros.**

Review Questions of the day:

1. Factor the following: $y = x^3 - 5x^2 - 6x$

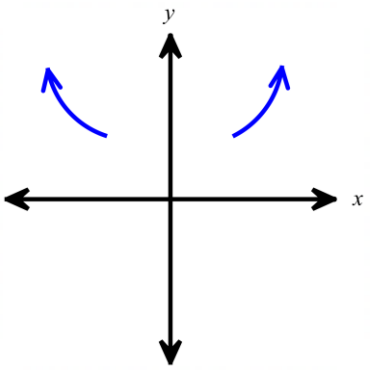
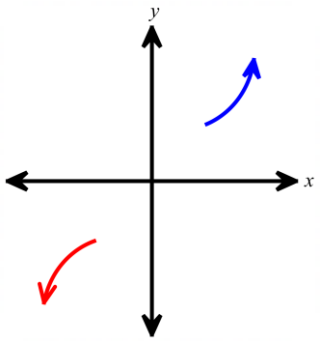
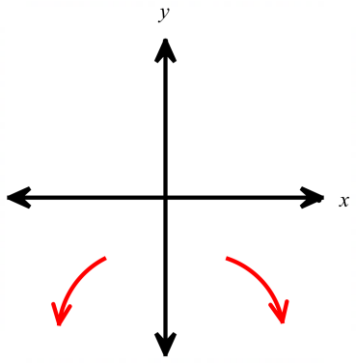
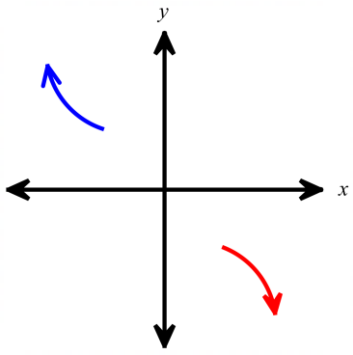
2. Solve the following $18 = 3(x+4)^2$

Polynomial Function: **Term:** **Coefficient:** **Degree:** **Constant:**



	Polynomial	# of terms	Leading Coefficient	Degree	Constant
1.	$5x^3 + x^2$				
a.	$3x^4 - 4x^5 + 6x^2 - 7$				
2.	$3x^5 + 3\sqrt{x}$				
b.	$3x^4 - 4x^3 + 6x^2 - \frac{2}{x}$				
3.	$-11x^7 + 4x^{-2}$				

End Behavior

	Even Degree		Odd Degree	
Positive Leading Coefficient				
	End Behavior Notation		**End Behavior Notation**	
	Interval Notation		**Interval Notation**	
Negative Leading Coefficient				
	End Behavior Notation		**End Behavior Notation**	
	Interval Notation		**Interval Notation**	

Without using a graphing calculator, determine the end behavior of teach of the following polynomials.

4. $f(x) = -2x^3 + 4x + 12$ **5.** $g(x) = 4x - 2x^4 + 1$ **c.** $h(x) = -\frac{1}{2}x + 4.32x^2 + 33x^6$

Zeros (ZARS): **Zero Product Property:** **Fundamental Rule of Algebra:**

Multiplicity of Zeros: **Odd Multiplicity vs. Even Multiplicity**

The higher the multiplicity, the _____ the graph near the zero.

Find the total number of zeros for each function. Identify the multiplicity of each set of zeros.

6. $f(x) = 3(x-2)(x+4)^2$ **7.** $g(x) = -3(x+3)(x-7)^3$ **d.** $h(x) = x(x-11)^7(x-\frac{3}{4})^2$

8. $h(x) = x^3 + 6x^2 + 5x$ **9.** $f(x) = x^3 + 7x^2 - 4x - 28$ **e.** $g(x) = x^4 - 8x^3 + 16x^2$

10. $h(x) = 2x^2 - 7x + 3$

Day 6 – Section 2.3A – Polynomial Functions and Zeros

Objectives: **SWBAT identify use the Intermediate Value Theorem, and find zeros for polynomials**

Review Questions of the day:

1. State the multiplicity of $f(x) = (x-8)^3(x+2)^4$, and then state whether the graph crosses or touches the x-axis.

2. Find the zeros of $f(x) = x^4 - 6x^2 + 8$

Intermediate Value Theorem:

1. Decide if there is a real zero between -3 and -2 for $f(x) = 3x^3 - 10x + 9$

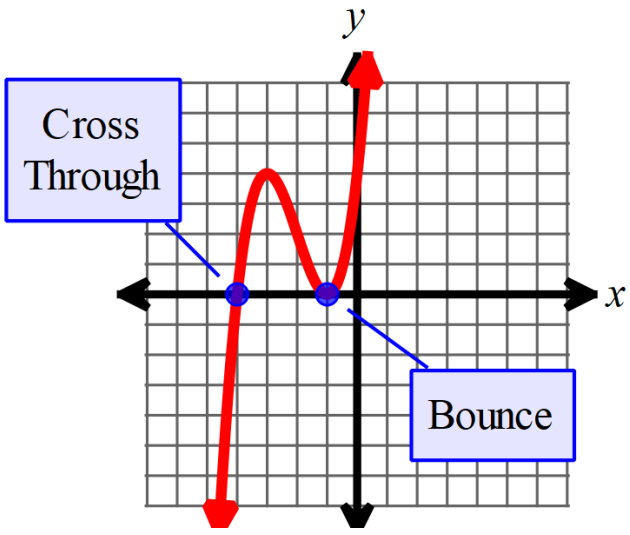
a. Decide if there is a real zero between 1 and 2 for $f(x) = 3x^3 - 10x + 9$

Graphing Trends:

Zeros (ZARS):

Even Multiplicity:

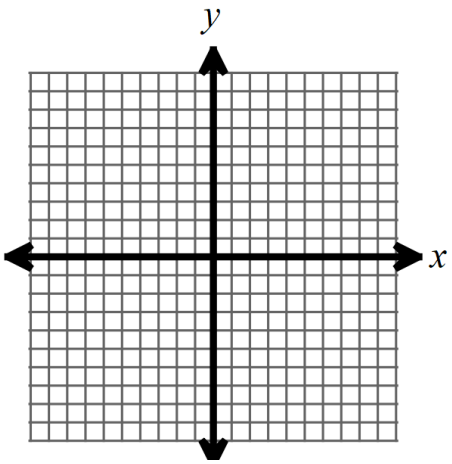
Odd Multiplicity:



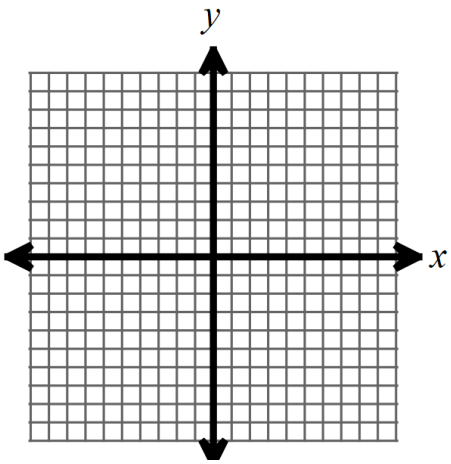
The higher the multiplicity, the _____ the graph near the zero.

Graph each polynomial function by using the Multiplicity of Zeros, and the End Behavior. Do not use a graphing calculator.

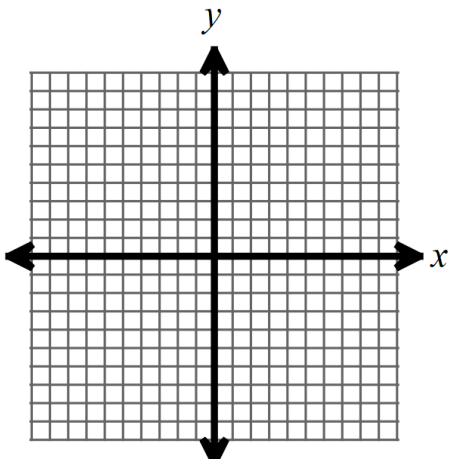
2. $f(x) = x^3 + 2x^2 - x - 2$



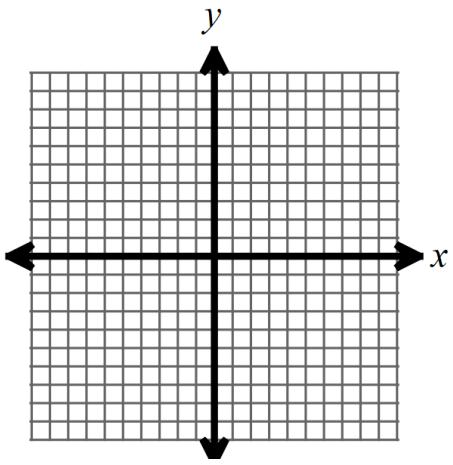
3. $f(x) = -2x^4 + 4x^3$



3. $f(x) = -2x^3(x-1)(x+4)$

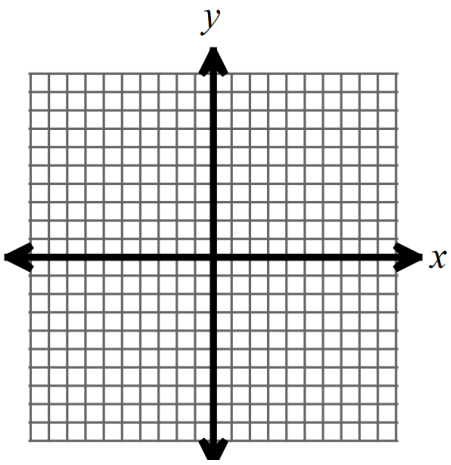


b. $g(x) = x^4 - 5x^2 + 4$

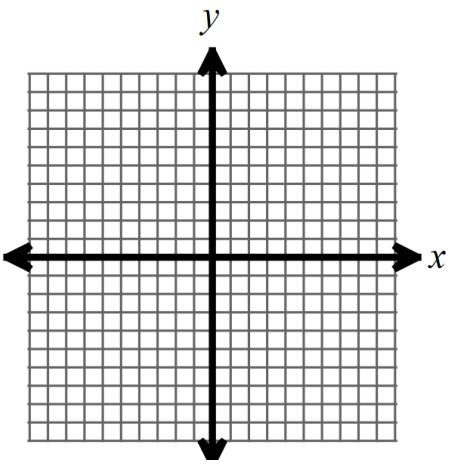


Sketch the following functions using a graphing calculator.

4. $g(x) = 6x^3 - 9x - x^5$



c. $h(x) = (x - 2)(x + 3)(x - 1)$



Day 7 – Section 2.4 – Dividing Polynomials

Objectives: **SWBAT use Long and Synthetic division to find the zeroes of a function.**

Review Questions of the day:

1. What is the remainder after dividing $12\sqrt{104}$

2. Find the zeros of $f(x) = x^4 - 3x^2 + 2$

Long Division of polynomials:

Synthetic Division:

Remainder

Long Division

$$x-3 \;\big|\; 2x^3-5x^2-8x+15$$

$$2x^2 + x - 5$$

$$2x^3 - 6x^2$$

$$x^2 - 8x$$

$$x^2 - 3x$$

$$-5x + 15$$

$$-5x + 15$$

Remainder 0

Synthetic Division

3	2	-5	-8	15
		6	3	15
	2	1	-5	0

Remainder

For 1 – 4, decide whether to use synthetic or long division, and then divide.

1. $(2x^3 + 4x^2 - 3x + 4) \div (x - 1)$

2. $(-4x^4 - 4x + 8) \div (2x + 1)$

3. $(3x^3 - 7x - 10) \div (x^2 - 2x)$

a. $(-x^3 - 4x + 5) \div (x + 1)$

b. Divide $f(x) = 3x^4 - 5x^3 + 4x - 6$ by $x^2 - 3x + 5$

Synthetic Substitution:

5. Find $f(-2)$ if $f(x) = 3x^3 - 2x + 1$

b. $g(x) = x^4 + 3x^3 - 4x^2 - x$ when $x = 1$

Finding the Zeros using Synthetic Division:

Given a zero, find all the remaining zeros of the polynomial function.

6. Given: -1 is a zero, and $f(x) = 15x^3 + 14x^2 - 3x - 2$

c. $f(x) = x^3 - 2x^2 - 23x + 60; x = 3$

Rational Zero Theorem:

List the possible rational zeros *f* using the rational zero theorem.

7. $f(x) = 4x^4 - x^3 - 3x^2 + 9x - 10$

Factors of the constant term: **Factors of the leading coefficient:**

Possible rational zeros: **Simplified list of zeros:**

Total Number of Possibilities	Total Number of Zeros

List all the possible zeros, and then find all the zeros for the following polynomials.

8. $y = x^3 + 2x^2 - 5x - 6$

d. $f(x) = 2x^3 - 4x^2 + 5$

Day 8 – Section 2.5 – Zeros of a Polynomial

Objectives: **SWBAT find the zeroes of a function.**
Write the equation of a polynomial given specific zeros and a point.

Review Questions of the day:

1. State all the possible rations zeros of $f(x) = 3x^3 + 4x + 7$

2. Use the quadratic formula to solve $f(x) = x^2 - 6x + 13$

Fundamental Rule of Algebra:

Descartes Rule of Signs:

Positive Zeros: **Negative Zeros:** **Imaginary Zeros:**

Determine the total number of zeros, possible numbers of positive real zeros, possible numbers negative real zeros, and possible numbers imaginary zeros.

1. $f(x) = x^6 - 2x^5 + 3x^4 - 10x^3 - 6x^2 - 8x - 8$

a. $g(x) = 2x^4 - 8x^3 + 6x^2 - 3x + 1$

Positive Real Zeros	Negative Real Zeros	Imaginary Zeros	Total Zeros

Positive Real Zeros	Negative Real Zeros	Imaginary Zeros	Total Zeros

Solve the following polynomial equations.

3. $3x^4 - 11x^3 - 3x^2 - 6x + 8 = 0$

4. $-x^3 + 3x^2 - 4 = 0$

Find all the zeros for the following function.

b. $f(x) = x^4 - 15x^2 - 10x + 24$

Writing the Equations of Polynomials:

Find a polynomial function of the least degree with the following zeros or roots.

5. $x = 2 \; and \; x = -3$

6. 4 and $\pm 2i$

c. $(0,0), (1,0)$, and $(-2,0)$

7. Find a third degree polynomial with zeros 1, 2, and -1 where $f(3) = 8$

8. Find a third degree polynomial with zeros $6, 5 + 2i$, and where $f(4) = -20$

Day 9 – Section 2.6 – Asymptotes and Rational Functions

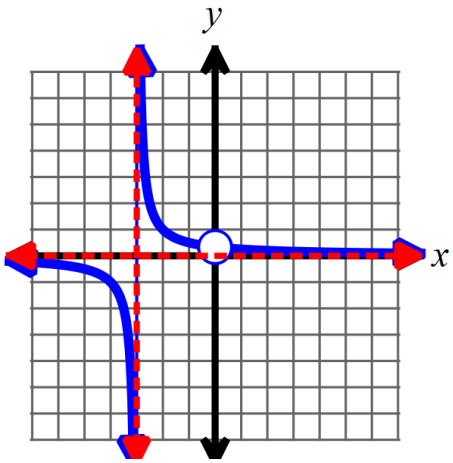
Objectives: **SWBAT state the vertical and horizontal asymptotes of rational functions. SWBAT find Holes, Domain, and Range of rational functions.**

Review Questions of the day:

1. What value for the following function will make the domain undefined? $y = \frac{5}{x+2}$

2. List all possible zeros and find the zeroes for the following $f(x) = 3x^4 - 5x^2 + 3x - 9$

Rational Functions



Vertical Asymptote:

Horizontal Asymptote:

Case 1: **Case 2:** **Case 3:**

Holes:

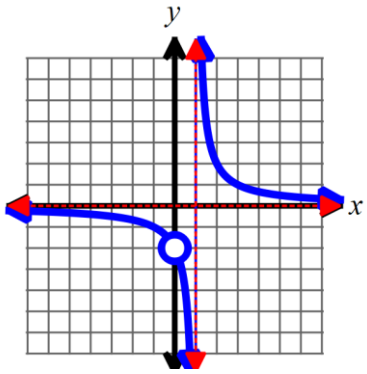
x-intercepts:

Domain:

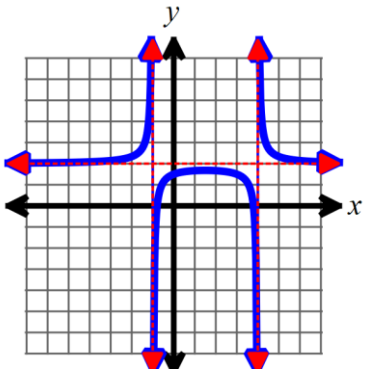
$\cup$

Find the domain of the following functions:

1.



a.



Find the vertical asymptote(s), horizontal asymptote(s), and holes, if any, on each of the functions below.

2. $f(x) = \frac{1}{x+3}$

3. $f(x) = \frac{2x}{x+4}$

4. $f(x) = \frac{15x}{2x^2+1}$

b. $g(x) = \frac{-3x-7}{5x+2}$

5. $f(x) = \frac{12x^3}{x^2+1}$

6. $f(x) = \frac{x}{x^2-4x}$

7. $g(x) = \frac{x+2}{x^2+2x}$

c. $g(x) = \frac{2x}{x^2-5x+4}$

Day 10 – Section 2.6A – Graphing Rational Functions

Objectives: **SWBAT graph rational functions**

Review Questions of the day:

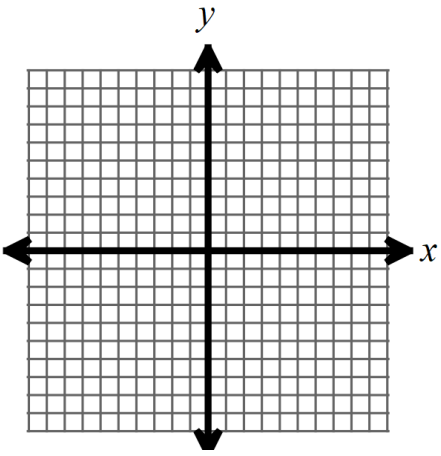
1. Write a rational function with VA at $x = 2$, and HA at $y = 0$.

2. Write a rational function with $VA = 5$, and a hole at $x = 3$.

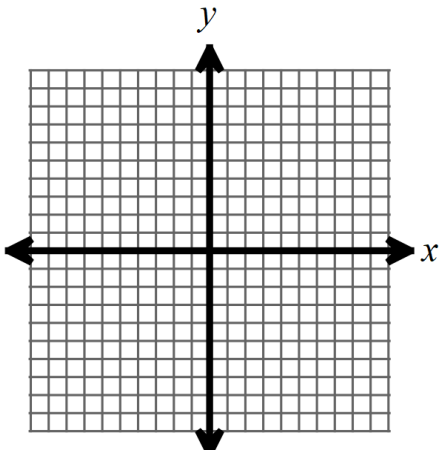
3. State the HA of $y = \frac{1}{x} + 2$

Graph and compare the two graphs given on each example. Use a different color for each.

1. $f(x) = \frac{1}{x}$ and $g(x) = \frac{5}{x}$

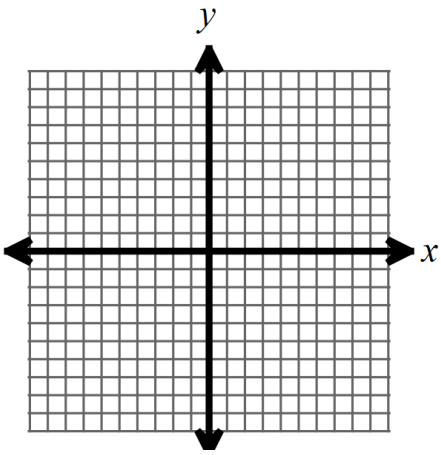


2. $f(x) = \frac{1}{x^2}$ and $g(x) = \frac{1}{x^2} + 1$

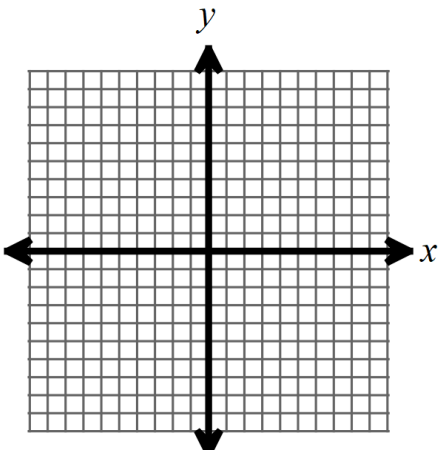


Graph the following rational functions, and all include horizontal asymptotes, vertical asymptotes, and holes.

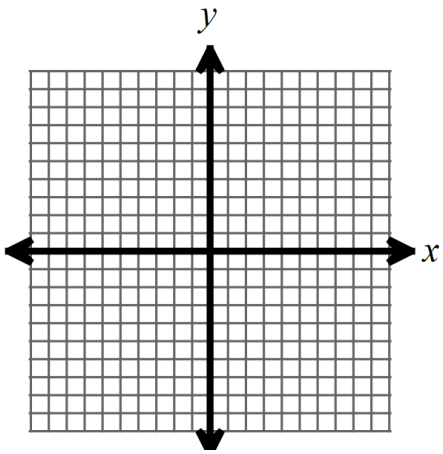
3. $g(x) = \frac{2}{x-2}$



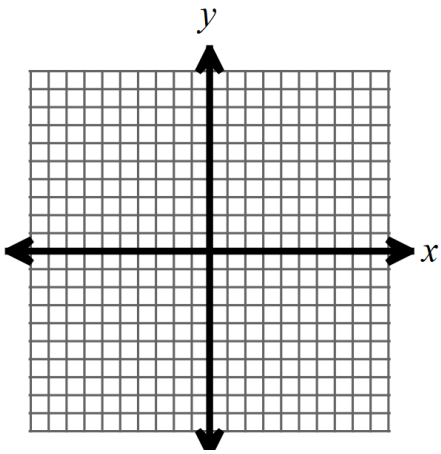
4. $h(x) = \frac{1}{(x+2)^2} - 3$



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

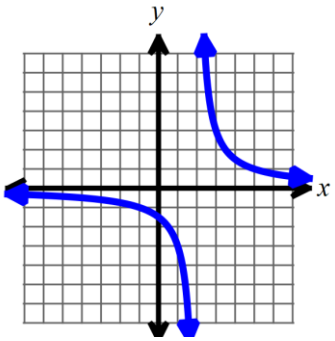
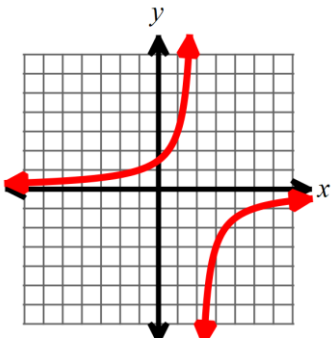
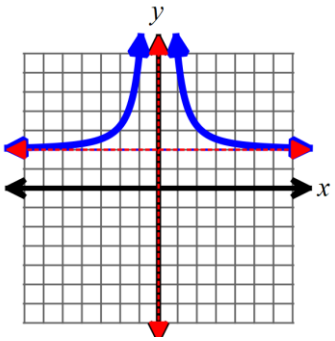
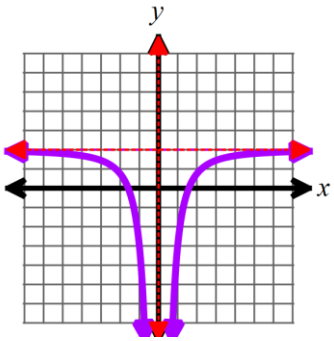
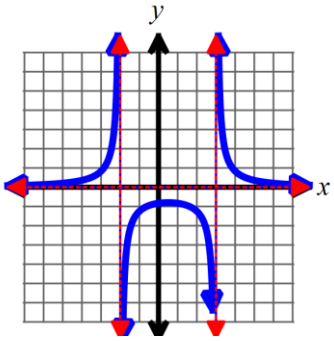
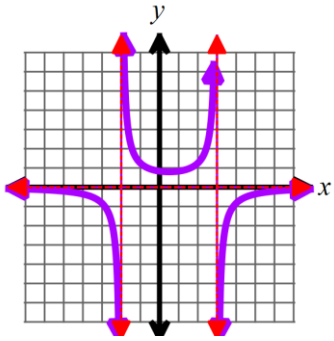


6. $g(x) = \frac{-1}{x^2+3x+2}$



Helpful Rational Functions Chart:

Vertical Asymptotes	Horizontal Asymptotes		Holes
	Case #1		
	Case #2		
	Case #3		

Case	Positive "a" value	Negative "a" value
$y = \frac{a}{x \pm c}$		
$y = \frac{ax}{x \pm c}$		
$y = \frac{a}{x^2} + k$		
	"k" value = _____	
$y = \frac{a}{(x \pm b)(x \pm c)}$		
$y = \frac{ax}{(x \pm b)(x \pm c)}$		

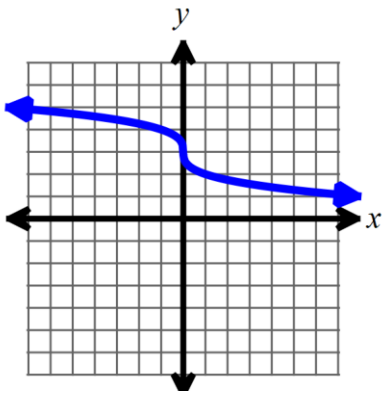
Day 11 – Section 2.6B – Rational Functions and Domains

Objectives: **SWBAT graph rational functions**

Review Questions of the day:

1. State the domain of $y = \frac{x}{x^2-2} + 3$

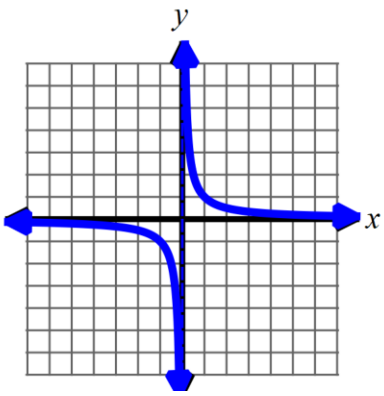
2. Give the end behavior for the graph below.



Approaching Notation

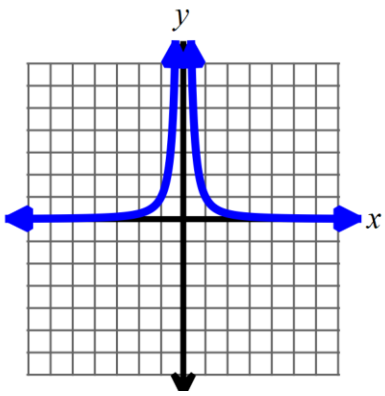
Given the function below, find where the graph approaches.

1.



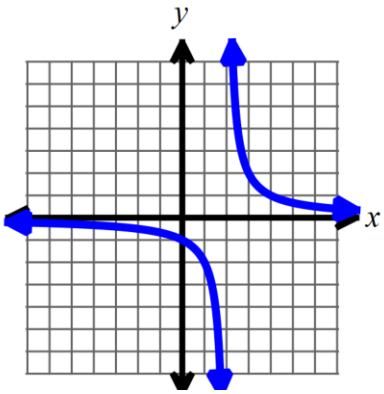
$x \to 0^-, f(x) \to$ _____ $x \to 0^+, f(x) \to$ _____

2.



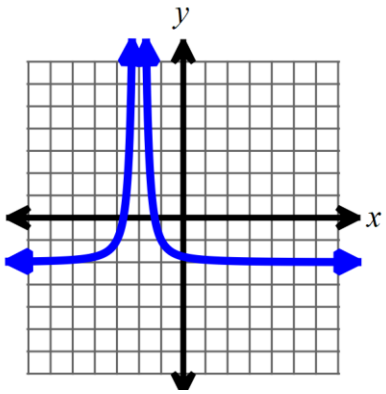
$x \to 0^-, f(x) \to$ _____ $x \to 0^+, f(x) \to$ _____

3.



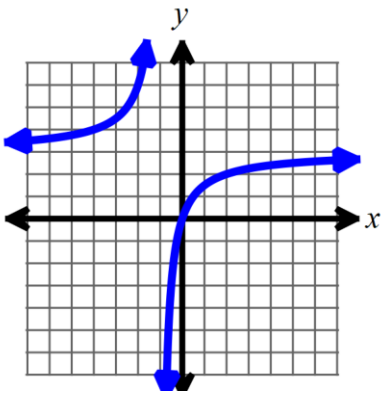
$x \to 2^-, f(x) \to$ _____ $x \to 2^+, f(x) \to$ _____

a.



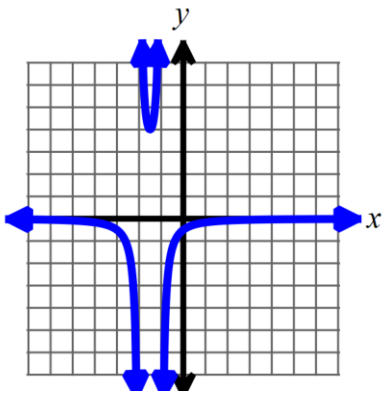
$x \to -2^-, f(x) \to$ _____ $x \to -2^+, f(x) \to$ _____

4.



$x \to -1^-, f(x) \to$ _____ $x \to -1^+, f(x) \to$ _____

b.



$x \to -2^-, f(x) \to$ _____ $x \to -2^+, f(x) \to$ _____

$x \to -1^-, f(x) \to$ _____ $x \to -1^+, f(x) \to$ _____

For 5, find where the graph approaches, and then find the end behavior.

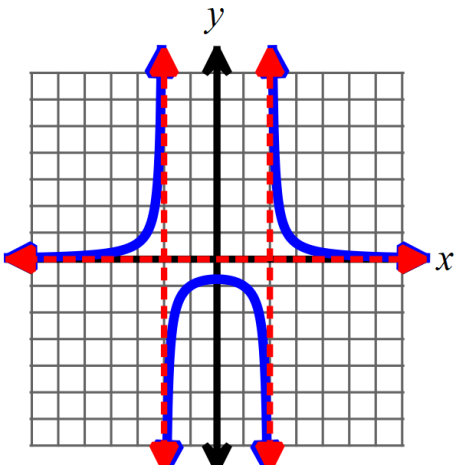
5.

$x \to -2^-, f(x) \to$ _____

$x \to -2^+, f(x) \to$ _____

$x \to 2^-, f(x) \to$ _____

$x \to -2^+, f(x) \to$ _____



End Behavior

$x \to -\infty, f(x) \to$ _____

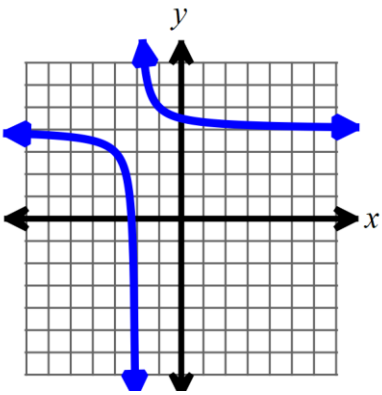
$x \to +\infty, f(x) \to$ _____

Limits

Limit Notation

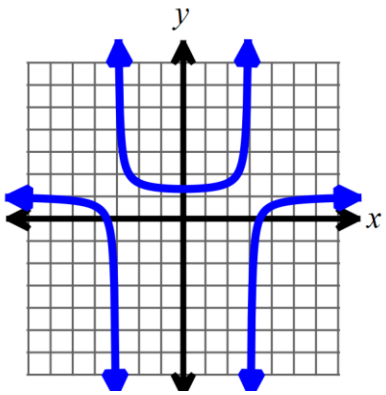
Find the limit for each graph given below.

6.



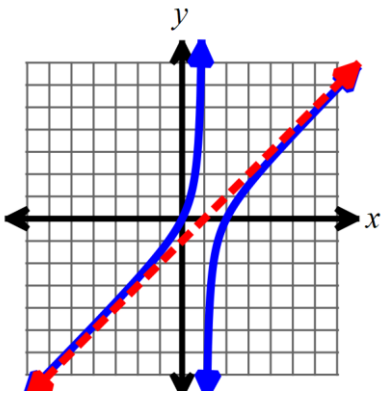
$\lim_{x \to \infty} f(x) =$ _____

c.



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

Slant Asymptotes:



Find the slant asymptotes for the following functions.

7. $y = \frac{2x^2-5x+7}{x-2}$

d. $f(x) = \frac{x^2}{x+1}$

Day 12 – Section 2.7 – Solving Polynomial Inequalities

Objectives: **SWBAT solve polynomial inequalities graphically and algebraically**

Review Questions of the day:

1. List all the possible zeros for: $f(x) = 2x^3 - 3x + 7$

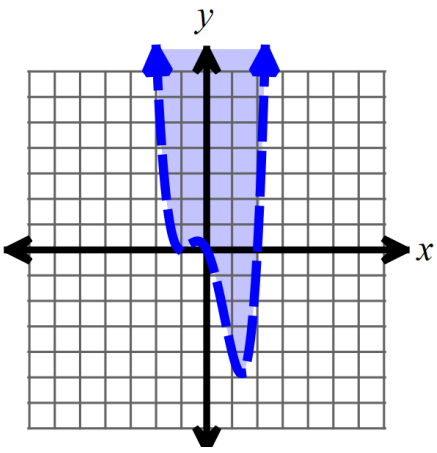
2. Factor $12x^2 + x - 35$

3. Fill in the end behavior for the following table

	Positive Leading Coefficient	Negative Leading Coefficient
Odd Degree		
Even Degree		

Polynomial Inequality

Solving Polynomial Inequalities Graphically

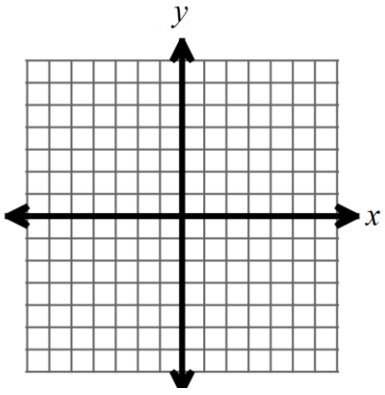


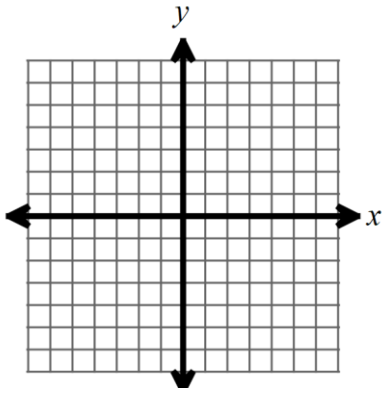
Solve the following polynomial inequality graphically.

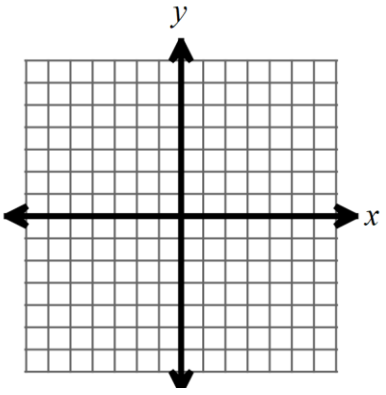
1. $x^2 - 5x + 4 > 0$

a. $(x - 3)^2 \leq 4$

2. $x^3 + x^2 \leq 4x + 4$







Solving Polynomial Inequalities Algebraically:

3. $2x^2 - 7x < 4$

4. $3x^2 + 16x < -5$

b. $x^2 \geq 14x + 51$

5. $x^3 \leq 4x^2$

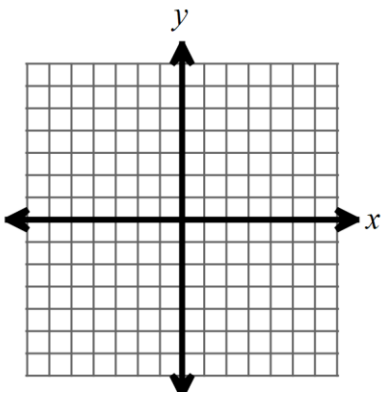
Day 13 – Section 2.7A – Solving Rational Inequalities

Objectives: **SWBAT solve rational inequalities graphically and algebraically**

Review Questions of the day:

1. Find all asymptotes of: $f(x) = \frac{2x^2+1}{x^2-6x}$

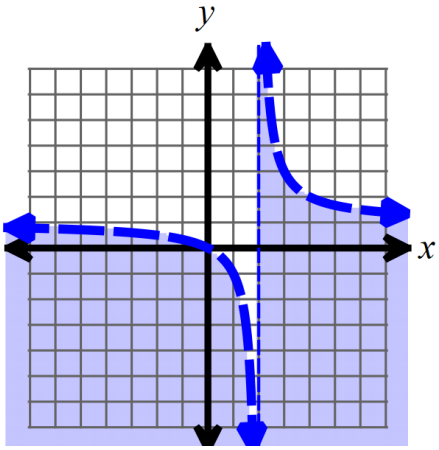
2. Graph: $y = -2$



3. Solve $x^2 - 3x \geq 54$

Rational Inequality

Solving Rational Inequalities Graphically

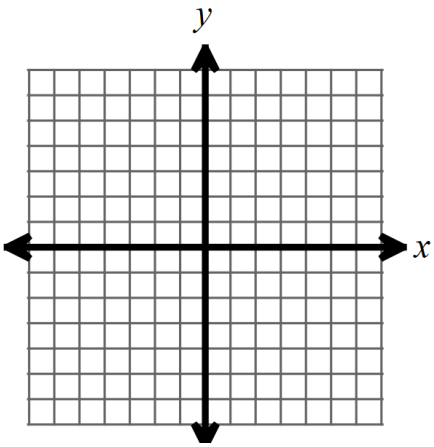


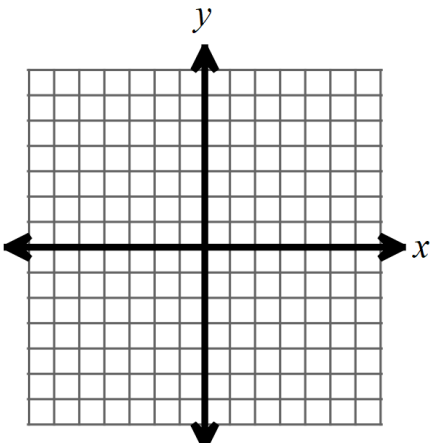
Solve the following rational functions graphically.

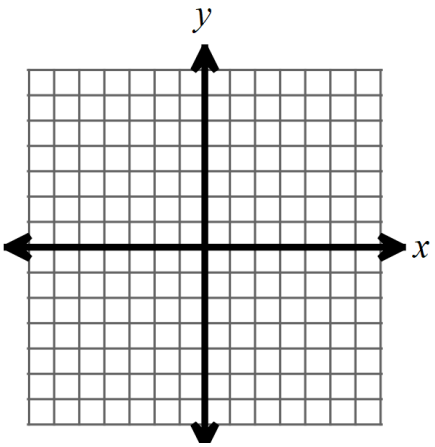
1. $\frac{3x+3}{2x+4} > 0$

2. $\frac{x}{x-1} > 2$

a. $\frac{x-2}{x+4} \leq 0$







Solving Rational Inequalities Algebraically

3. $\frac{x+1}{x+3} \geq 2$

4. $\frac{x+5}{x+2} < 0$

b. $\frac{3x+5}{6-2x} \geq 0$

6. $\frac{1}{x-3} < 1$