Name: _____   **Date:** _____   **Hour:** _____

Precalculus Unit 7 Extra Practice

I CAN analyze the twelve basic functions.			
Identity Function $y = x$	Squaring Function $y = x^2$	Cubing Function $y = x^3$	Reciprocal Function $y = \dfrac{1}{x}$
Square Root Function $y = \sqrt{x}$	Absolute Value Function $y = |x|$	Exponential Function $y = e^x$	Natural Logarithm Function $y = \ln x$
Sine Function $y = \sin x$	Cosine Function $y = \cos x$	Greatest Integer Function $y = int\,[x]$	Logistic Function $y = \dfrac{1}{1 + e^{-x}}$

Identify which of the twelve basic functions, listed above, fit the description given.

1. The three functions that are even.

2. The two functions with infinitely many zeroes.

3. The three functions with end behavior $\lim\limits_{x \to -\infty} f(x) = -\infty$.

4. The three functions that are bounded.

5. The four functions that are odd.

6. The three functions with no zeros.

7. The two functions with end behavior $\lim\limits_{x \to -\infty} f(x) = \infty$.

8. The three functions that are bounded above.

Name: _____ **Date:** _____ **Hour:** _____

Precalculus Unit 7 Extra Practice

I CAN analyze the graph of a rational function.

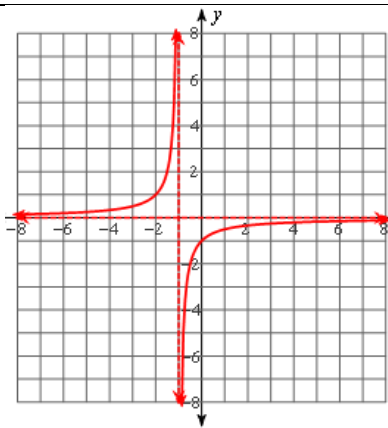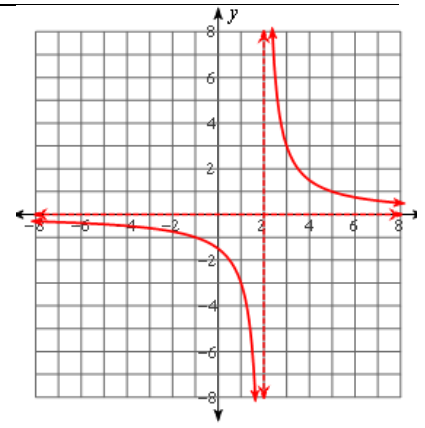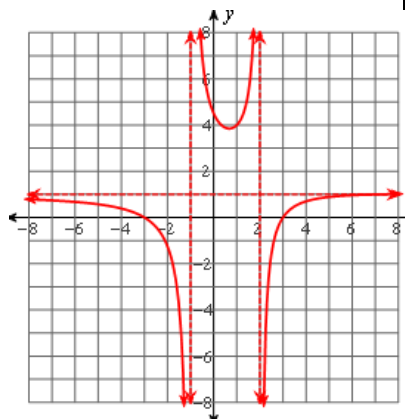---

1.

Domain:

Range:

zeroes:

y-intercepts:

Continuous:

Bounded:

Vertical Asymptotes:

Horizontal Asymptotes:

2.

Domain:

Range:

zeroes:

y-intercepts:

Continuous:

Bounded:

Vertical Asymptotes:

Horizontal Asymptotes:

3.

Domain:

Range:

zeroes:

y-intercepts:

Continuous:

Bounded:

Vertical Asymptotes:
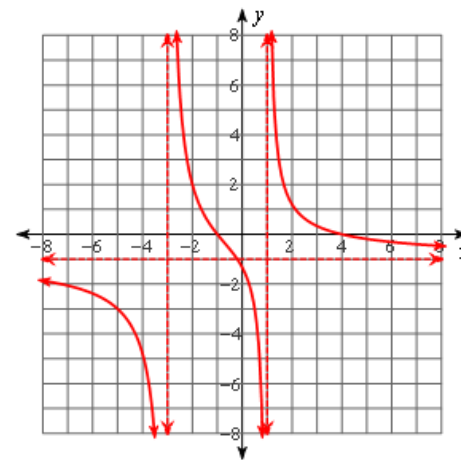
Horizontal Asymptotes:

4.

Domain:

Range:

zeroes:

y-intercepts:

Continuous:

Bounded:

Vertical Asymptotes:

Horizontal Asymptotes:

Precalculus Unit 7 Extra Practice

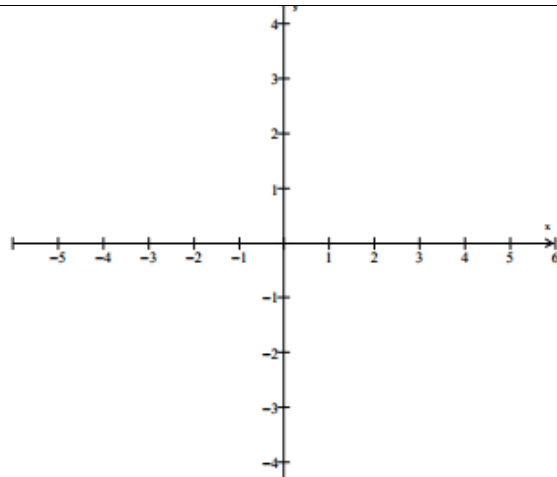| **I CAN analyze rational functions for critical information and graph.** |
| --- |

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

   Vertical Asymptotes:

   Horizontal Asymptotes:

   x-intercept:

   y-intercept:

   Use limits to describe the corresponding behavior.
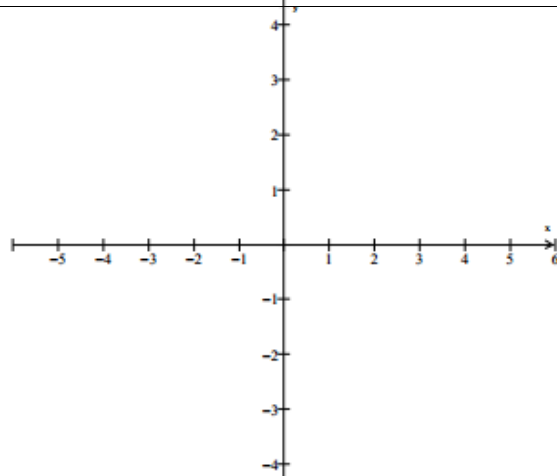
2. $f(x) = \dfrac{x+2}{x+3}$

   Vertical Asymptotes:

   Horizontal Asymptotes:

   x-intercept:

   y-intercept:

   Use limits to describe the corresponding behavior.
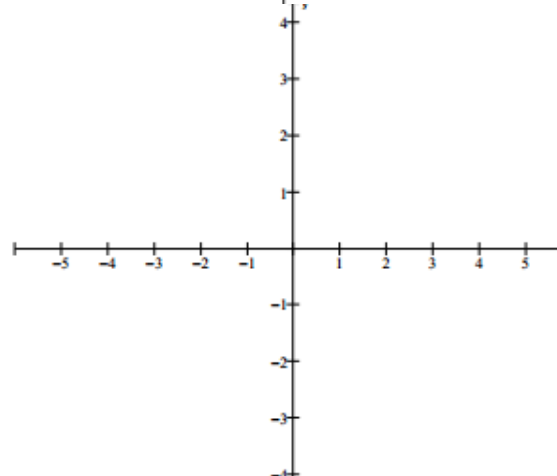
3. $f(x) = \dfrac{x^2-3x-4}{x^2+2x-3}$

   Vertical Asymptotes:

   Horizontal Asymptotes:

   x-intercept:

   y-intercept:

   Use limits to describe the corresponding behavior.

Precalculus Unit 7 Extra Practice

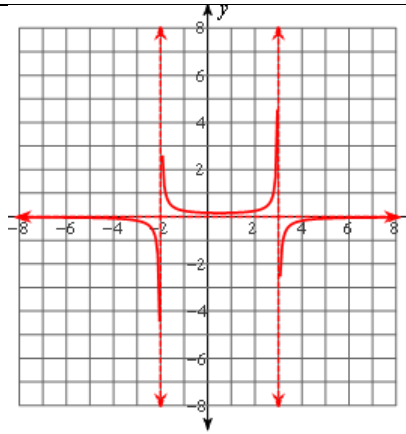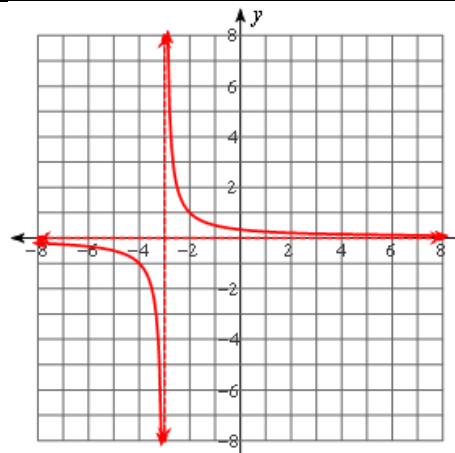|	
4. Function: Vertical Asymptotes: Horizontal Asymptotes: x-intercept: y-intercept:	
5. Function: Vertical Asymptotes: Horizontal Asymptotes: x-intercept: y-intercept:	
6. Function: Vertical Asymptotes: **x = -2, x = 3** Horizontal Asymptotes: **y = 0** x-intercept: **NONE** y-intercept: $(0, -\frac{1}{3})$	