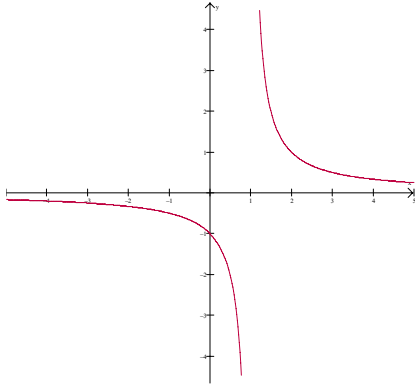


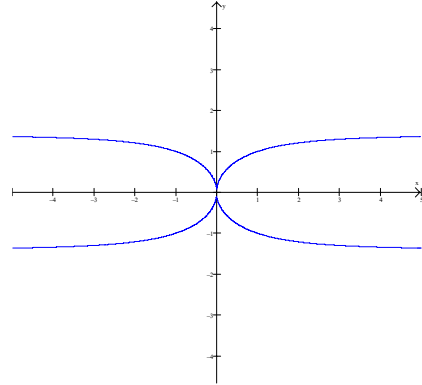
Name: _____

Math 95
Summer 2007
Test #1

1) Correctly categorize the graphs as a function or just a relation. Justify your answer.



a)



b)

2) Consider the function $f(x) = 2x^2 + x$

a) Use set or interval notation to describe the domain of $f(x)$

b) Evaluate $f(2)$

c) Evaluate $f(a+1)$

3) Use interval notation to describe the solutions for the following inequalities.

a) $1 < x < 8$

b) $x \geq 1$ or $x > 6$

c) $x > 1$ and $x < -1$

4)

a) Find a linear function parallel to $3x + 2y = 1$ with a y -intercept $(0, 1)$.

b) Graph the function of the line determined in part a:

5) Find all solutions to the following absolute value: $2|x|-6=3$

6) For the function $f(x) = \frac{1}{x^2 - 9}$

a) Describe the domain of $f(x)$ using set or interval notation.

b) List any vertical asymptotes of $f(x)$. (Remember vertical asymptotes are lines.)

7) Simplify the following rational expression:

$$\frac{x^2 - 25}{x^2 + 10x + 25} =$$

8) Multiply and if possible simplify the following rational expression:

$$\frac{5a^3}{3b} * \frac{7b^3}{10a^7} =$$

9) Divide and if possible simplify the following rational expression:

$$\frac{9x^5}{8y^2} \div \frac{3x}{16y^9}$$

10) Subtract the following Rational Expressions:

$$\frac{x-7}{x^2-16} - \frac{x-1}{16-x^2}$$

11) Simplify the following complex rational expression:

$$\frac{\frac{a^{-1} + b^{-1}}{a^2 - b^2}}{ab}$$

12) Solve the following rational equation: (make sure to check your domain)

$$\frac{x^2 + 4}{x - 1} = \frac{5}{x - 1}$$

13) Solve the following rational equation: (make sure to check your domain)

$$\frac{y+3}{y+2} - \frac{y}{y^2-4} = \frac{y}{y-2}$$