Name: _____

Work Sheet #7

In this Work Sheet, we'll use derviatives to help us understand the graph of $f(x) = \frac{1}{x} - \frac{1}{x^2}$.

- 1. (a) What is the largest possible domain for f(x)?
 - (b) Compute $\lim_{x \to \infty} f(x)$
 - (c) Find all vertical and horizontal asymptotes of the graph of y = f(x).

2. Compute f'(x) and simplify it into one fraction.

3. Where is the graph of y = f(x) increasing and decreasing? Find all critical values.

4. What is the maximum value of f(x)? What is the range of f(x)?

(there's more on the back...)

5. Compute f''(x) and simplify it into one fraction.

6. Where is the graph of y = f(x) concave up and concave down? Find all inflection points.

7. Sketch a careful graph of y = f(x). Plot all critical points and inflection points.