

Name: \_\_\_\_\_  
PCH: Solving Rational Inequalities Graphically

Date: \_\_\_\_\_  
Ms. Loughran

Do Now:

1. Solve the following equation graphically by doing each of the following:
  - (a) Draw a complete graph of the function showing all intercepts and asymptotes.
  - (b) Write the window settings you use on your graph.
  - (c) Find the solution set

$$\frac{1}{x+3} = -4$$

Solve each rational inequality below graphically by doing the following:

- (a) Draw a complete graph of the function showing all intercepts and asymptotes.
- (b) Write the window settings you use on your graph.
- (c) State the solution set using both set builder notation and interval notation.

1.  $\frac{1}{x+3} \geq -4$

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

$$3. \frac{1}{x+3} \leq -4$$

$$4. \frac{1}{x+3} < -4$$

$$5. \frac{x-3}{x+5} \leq 9$$

$$6. \frac{x+3}{2x-7} < 5$$

## *Practice*

Solve each rational inequality below graphically by doing the following:

- Draw a complete graph of the function showing all intercepts and asymptotes.
- Write the window settings you use on your graph.
- State the solution set using both set builder notation and interval notation.

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

4.  $\frac{2}{x-2} + \frac{5}{x} \leq 7$

2.  $\frac{x^2-x+1}{x+2} < 3$

5.  $\frac{3}{x-1} + \frac{2}{x} \geq 8$

3.  $\frac{x-1}{x^2-4} \leq 0$

6.  $\frac{x-1}{x+4} + \frac{2}{x-8} \geq 10$