Section 9.3

NOTES DAY 1:

Find any points of discontinuity for each rational function.

1. $y = \frac{x + 3}{(x - 4)(x + 3)}$
2. $y = \frac{x - 2}{x^2 - 4}$
3. $y = \frac{(x - 3)(x + 1)}{(x - 2)}$
4. $y = \frac{3x(x + 2)}{x(x + 2)}$
5. $y = \frac{2}{(x + 1)}$
6. $y = \frac{4x}{x^3 - 9x}$

Find the horizontal asymptote of the graph of each rational function.

7. $y = \frac{2}{x - 6}$
8. $y = \frac{x + 2}{x - 4}$
9. $y = \frac{x^2 - 2}{x + 2}$
10. $y = \frac{2x^2 + 3}{x^2 - 6}$
11. $y = \frac{3x - 12}{x^2 - 2}$
12. $y = \frac{3x^3 - 4x + 2}{2x^3 + 3}$

HOMEWORK DAY 2:

Find all holes, x and y-intercepts, vertical and horizontal asymptotes. Label all on a graph then sketch the graph using a graphing calculator.

13. $y = \frac{x - 2}{(x + 2)(x - 2)}$
14. $y = -\frac{x}{x(x - 1)}$
15. $y = \frac{5 - x}{x^2 - 1}$
16. $y = \frac{x^2 - 2}{x + 2}$
17. $y = \frac{x^2 - 4}{x^2 + 4}$
18. $y = \frac{x + 3}{x^2 - 9}$
19. $y = \frac{x^2 - 25}{x - 4}$
20. $y = \frac{(x - 2)(2x + 3)}{(5x + 4)(x - 3)}$
21. $y = \frac{15x^2 - 7x - 2}{x^2 - 4}$