

Name: _____

Date: _____

PCH: Graphing Rational Functions

Sketch the graph of each rational function. Label all holes and intercepts with their coordinates and any and all asymptotes with their equations. Remember to gather all pertinent information that we discussed in our chart work. Then state the domain of each.

1. $y = \frac{2x}{2x-1}$

12. $y = \frac{x^2 + 2x}{x}$

2. $y = \frac{x^2 - 1}{x^2 + 1}$

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

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

14. $y = \begin{cases} \frac{x^2 + 1}{x} & \text{if } x > 0 \\ \frac{1}{x} & \text{if } x < 0 \end{cases}$

4. $y = \frac{x^2 + 1}{x}$

5. $y = \frac{x^2 + 2x - 8}{x}$

6. $y = \frac{1}{x^2 - 2x + 1}$

7. $y = \frac{x + 1}{x^2 - x - 2}$

8. $y = \frac{1}{x^2 - 4}$

9. $y = \frac{1 - x^2}{x^2 - 9}$

10. $y = \frac{3x^2 + 6}{x^2 - 2x - 3}$

11. $y = \frac{5x^2 + 5}{x^2 + 4x + 4}$