

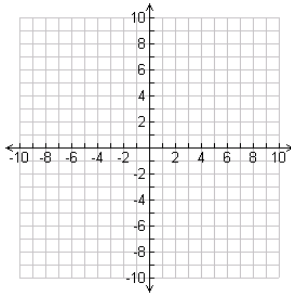
Math 3
Unit 5 Test Review

Name: _____

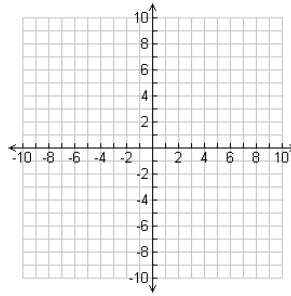
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Directions: Sketch the asymptotes and the graph of each function. Identify the domain and the range.

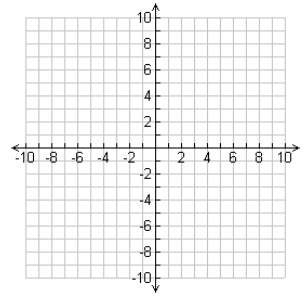
1. $y = \frac{8}{x} - 1$



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

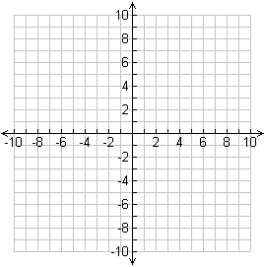


3. $y = \frac{2}{x+1}$

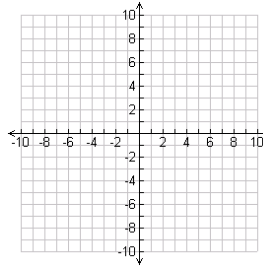


Directions: Find points of discontinuity, the domain, and x - and y -intercepts of each rational function.

4. $y = \frac{x+3}{x^2-9}$



5. $y = \frac{5-x}{x^2-25}$



Simplify. State any restrictions on the variables.

6. $\frac{5x^2y}{10xy^4}$

7. $\frac{4d^2+8d}{2d}$

8. $\frac{x^2+9x+18}{x+6}$

9. $\frac{x^2-2x-8}{x+3} \div \frac{x-4}{x+3}$

10. $\frac{3x+1}{x^2-x-6} \div \frac{6x^2+11x+3}{x^2+4x+4}$

11. $\frac{3x^4-x^3-2x^2}{6x^2-2x-4}$

12. $\frac{2x^2+5x-3}{x^2-4x} \cdot \frac{2x^3-8x^2}{x^2+6x+9}$

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

Simplify each sum or difference. State any restrictions on the variables.

14. $\frac{6x+1}{x+2} + \frac{2x-5}{2x+4}$

15. $\frac{8}{x^2-25} + \frac{9}{x-5}$

16. $\frac{x-3}{x^2+3x} + \frac{7}{x+3}$

17. $\frac{3x}{x^2+5x+6} - \frac{2x}{x^2+8x+16}$

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

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

Solve each equation. Check each solution.

20. $\frac{x}{4} = \frac{x+1}{3}$

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

22. $\frac{3x}{5} + \frac{4}{x} = \frac{4x+1}{5}$

23. $\frac{3x}{x-2} = 4 + \frac{x}{5}$

24. $x + \frac{x}{4} - \frac{x}{5} = 21$

25. $\frac{3}{x+4} + \frac{5}{4} = \frac{18}{x+4}$