

HW #73: SHOW ALL WORK on a separate piece of paper**Simplify the rational expression, if possible.**

1. $\frac{n^2 + 8n + 15}{n^2 - 25}$

2. $\frac{x^3 + 4x^2}{x^2 - 16}$

3. $\frac{x^2 - x - 12}{x^2 + x - 20}$

Perform the indicated operations. Simplify the result.

4. $\frac{x+2}{x+9} \cdot \left[\frac{x^2+9x}{x^2-4} \div \frac{3x^2+6x}{x^2+2x} \right]$

5. $\frac{x^2+8x-20}{5x^3+50x^2} \div \frac{x^2+9x}{x^2+7x-18}$

6. $\frac{5}{3(x+2)} + \frac{7}{3(x+2)}$

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

8. $\frac{x^2+11x+30}{x^2-25} \div \frac{x+6}{x-6}$

9. $\frac{3x+4}{x^2-16} - \frac{2}{x-4}$

10. $\frac{x^2y^3}{3x^4} \cdot \frac{(xy)^2}{x^3y} \div \frac{x^2y^4}{6y^3}$

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

12. $\frac{9}{x+3} + \frac{2}{x-3}$

Simplify the complex fraction.

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

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

15. $\frac{\frac{2}{x+2} - \frac{3}{x}}{\frac{3}{x+2} + \frac{2}{x}}$

Solve the equation. Check for extraneous solutions.

16. $\frac{6}{x-2} = \frac{5}{x-3}$

17. $\frac{4}{j-1} - \frac{1}{j-3} = 0$

18. $\frac{1}{a^2-9} = \frac{1}{a+3}$

19. $\frac{x-7}{x+9} = \frac{x+1}{x-4}$

Algebra 2 Chapter 8 Review

20. $\frac{k}{k+1} + \frac{1}{k-1} = \frac{4k-3}{(k+1)(k-1)}$

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

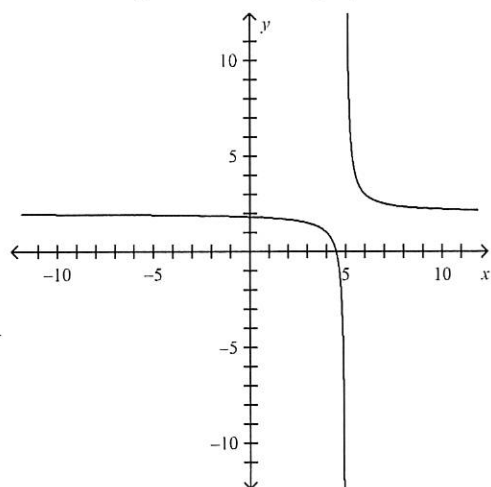
Graph each function. State the domain, range, intercepts, end behavior, and asymptotes.

22. $y = \frac{5}{x+2}$

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

24. $f(x) = \frac{2}{x+4} - 1$

25. Write an equation for the graph shown



HW #72: SHOW ALL WORK on a separate piece of paper**Answer Section**

1. $\frac{n+3}{n-5}$

2. $\frac{x^2}{x-4}$

3. $\frac{x+3}{x+5}$

4. $\frac{x}{3(x-2)}$

5. $\frac{(x-2)^2}{5x^3}$

6. $\frac{4}{x+2}$

7. $\frac{4}{x+3}$

8. $\frac{x-6}{x-5}$

9. $\frac{1}{x+4}$

10. $\frac{2y^3}{x^5}$

11. $\frac{x+1}{3x(x-4)}$

12. $\frac{11x-21}{x^2-9}$

13. $\frac{2x}{5x^2-27x-18}$

14. $\frac{2(x+3)}{15}$

15. $-\frac{x+6}{5x+4}$

16. 8

17. $\frac{11}{3}$

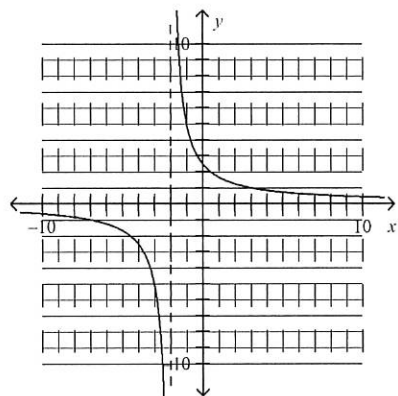
18. 4

19. $\frac{19}{21}$

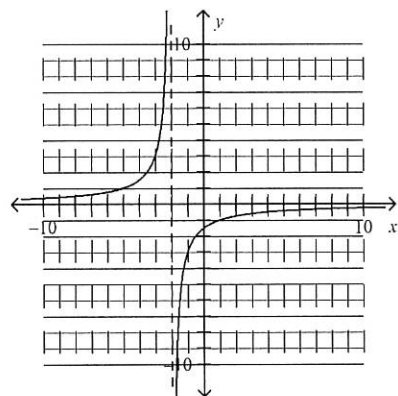
20. 2

21. -1, -3

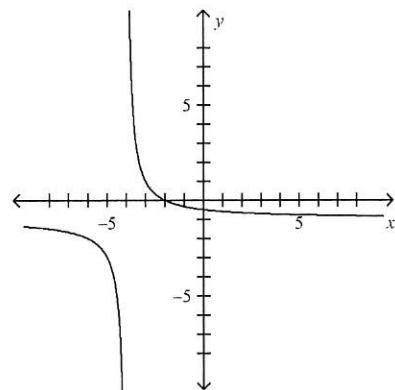
22.



23.



24.



25. $f(x) = \frac{1}{x-5} + 2$