

Find the domain, x and y intercepts and asymptotes of the function. Then sketch a graph of the function. Check your answers by graphing $f(x)$ with a graphing calculator.

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

6. $f(x) = \frac{1-x^2}{x^2-4x-5}$

2. $f(x) = \frac{x+6}{x^2-9}$

7. $f(x) = \frac{(2x-1)^2}{(1-3x)^2}$

3. $f(x) = \frac{x-3}{x^2+x-12}$

8. $f(x) = \frac{4x+1}{6+x^2}$

4. $f(x) = \frac{x-4}{x^2-x-6}$

9. $f(x) = \frac{5+x}{2x^3+8x^2+x-2}$

5. $f(x) = \frac{x^2-4x-21}{x^2-9}$

10. $f(x) = \frac{2x^3-x^2-18x+9}{3x^3+3x^2-36x}$

11. $f(x) = \frac{x^2 + 3x - 4}{x - 2}$

16. $f(x) = \frac{x^4 - 3x^3 + x^2 - 4}{x^3 + 1}$

12. $f(x) = \frac{2x^2 + 9x - 5}{x + 3}$

17. $f(x) = \frac{2x^4 - 4x^3 + x - 9}{1 - x^4}$

13. $f(x) = \frac{5x^2 - 8x - 4}{5x}$

18. $f(x) = \frac{x^4 + 3x^3 - 5x^2 - 4}{x^3 - x^2}$

14. $f(x) = \frac{x^3 - 5x^2 - 4x + 20}{x^2 - 1}$

19. $f(x) = \frac{5x^4 - x^2 + 3x - 4}{x^3 + 2x^2}$

15. $f(x) = \frac{x^3 - 9x^2 + 3x - 12}{x^2 - x - 6}$

20. $f(x) = \frac{3x^4 + 2x^3 - 5}{x^3 - 4x^2}$