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22. 3 complex zeros, all 3 real

26. 5 complex zeros, 1 real

30. Zeros: $x = -2$, $x = \frac{1}{3}$, $x = -\frac{1}{2} \pm \frac{\sqrt{3}}{2}i$; $f(x)$

$$f(x) = \frac{1}{4}(x + 2)(3x - 1)(2x + 1 + \sqrt{3}i)(2x + 1 - \sqrt{3}i)$$

34. Zeros: $x = \pm\sqrt{3}$, $x = \pm 4i$;

$$f(x) = (x - \sqrt{3})(x + \sqrt{3})(x - 4i)(x + 4i)$$

1. Find the domain of the function f . Use limits to describe the behavior of f at value(s) of x not in its domain.

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

2. Describe the transformation from $g(x) = \frac{1}{x}$. Identify the horizontal and vertical asymptotes and use limits to describe the corresponding behavior. Sketch the graph of the function.

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

3. Find the horizontal and vertical asymptotes of $f(x)$. Use limits to describe the corresponding behavior.

$$f(x) = \frac{3x^2}{x^2 + 1}$$

4. Find the asymptotes and intercepts of the function, and graph the function.

$$g(x) = \frac{-3x^2 + x + 12}{x^2 - 4}$$

5. Find the intercepts, asymptotes, use limits to describe the behavior at the vertical asymptotes, and analyze and draw the graph of the given rational function.

$$k(x) = \frac{x^2 - x - 2}{x - 3}$$

6. Graph the following rational function.

$$g(x) = \frac{2x^3 - 2x^2 - x + 5}{x - 2}$$

7. Find the intercepts, asymptotes, end behavior, and graph the function.

$$g(x) = \frac{x^5 + 1}{x - 1}$$