

5.5 The Graph of a Rational Function

▼ Example 1: Sketch a graph of the rational function

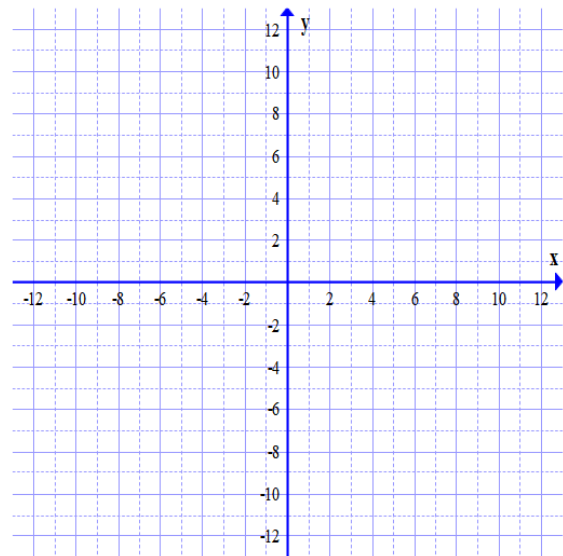
$$f(x) = \frac{2x}{x^2 - 9}$$

Find the domain.

Find any vertical asymptotes or holes in the graph

Find any horizontal or oblique asymptotes and any points where the function crosses these asymptotes

Find any x and y intercepts.



▼ Example 2: Sketch a graph of the rational function

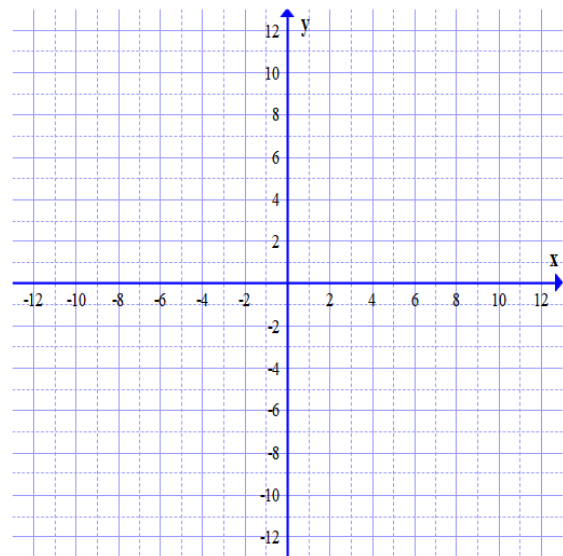
$$f(x) = \frac{3}{x+2}$$

Find the domain.

Find any vertical asymptotes or holes in the graph

Find any horizontal or oblique asymptotes and any points where the function crosses these asymptotes

Find any x and y intercepts.



▼ Example 3: Sketch a graph of the rational function

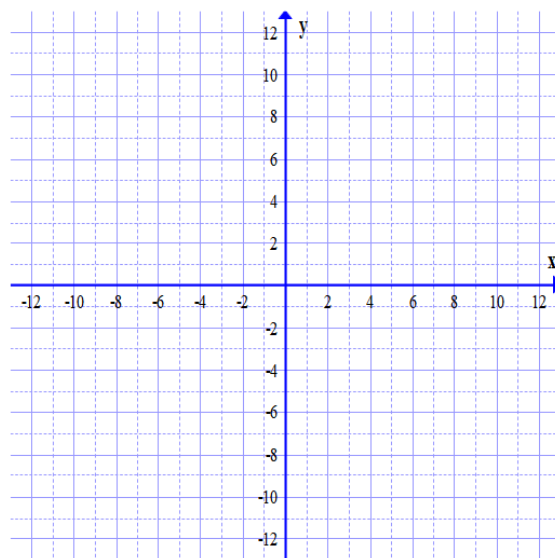
$$g(x) = \frac{x+1}{2x-6}$$

Find the domain.

Find any vertical asymptotes or holes in the graph

Find any horizontal or oblique asymptotes and any points where the function crosses these asymptotes

Find any x and y intercepts.



▼ Example 4: Sketch a graph of the rational function

$$R(x) = \frac{x^2 - 9}{x^2 + x - 2}$$

Find the domain.

Find any vertical asymptotes or holes in the graph

Find any horizontal or oblique asymptotes and any points where the function crosses these asymptotes

Find any x and y intercepts.

