Sec. 2.6 Graphing Rational Functions

A function f(x) is continuous if you can draw its graph without lifting your pencil:

Finding the **HORIZONTAL ASYMPTOTE** of a rational function:

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

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

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

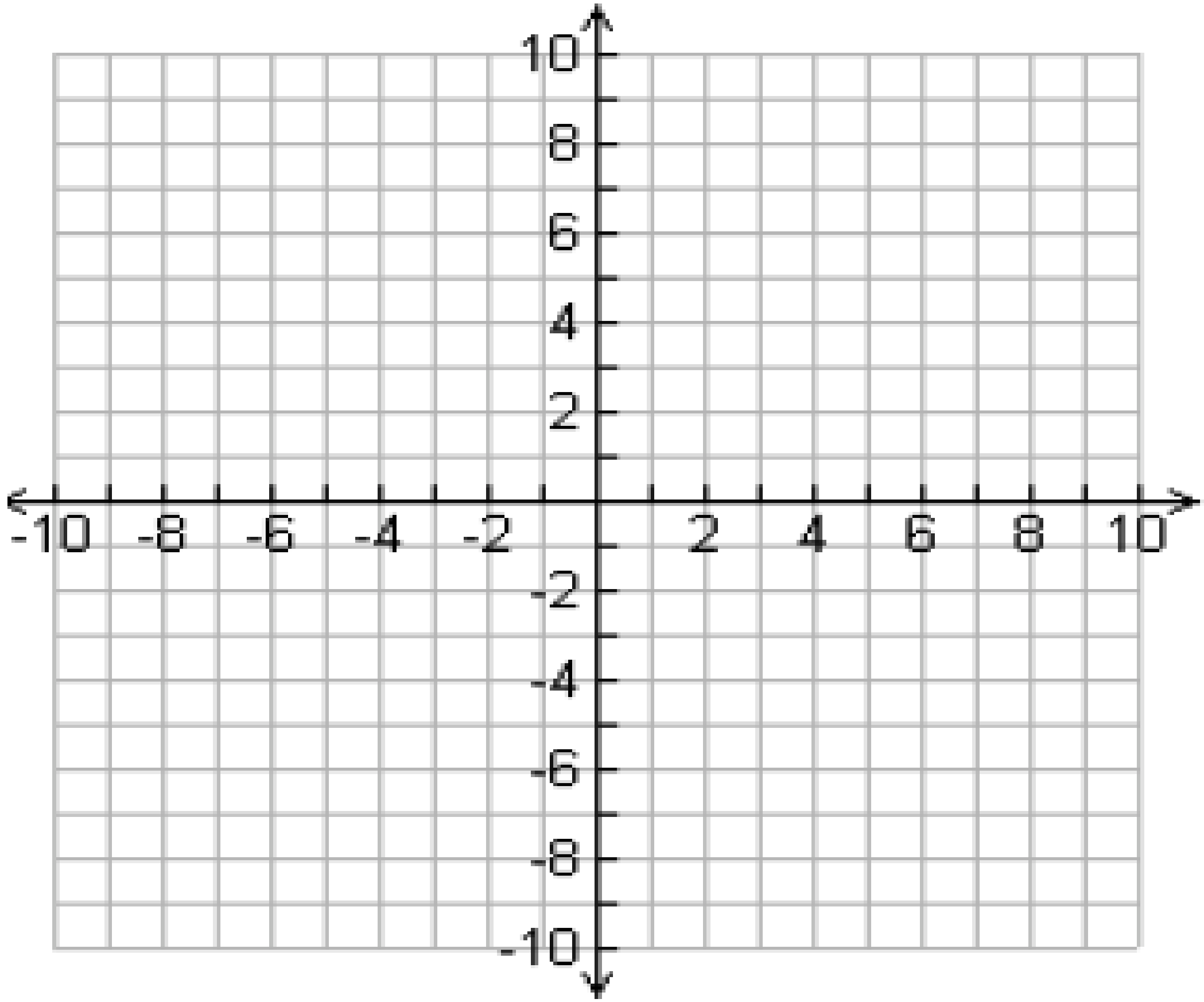
Directions: Sketch each graph. Find asymptotes, holes, intercepts, etc…

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

Horizontal/Oblique Asymptote:

Holes and/or Vertical Asymptotes:

X-Int.	Y-Int.



Domain:

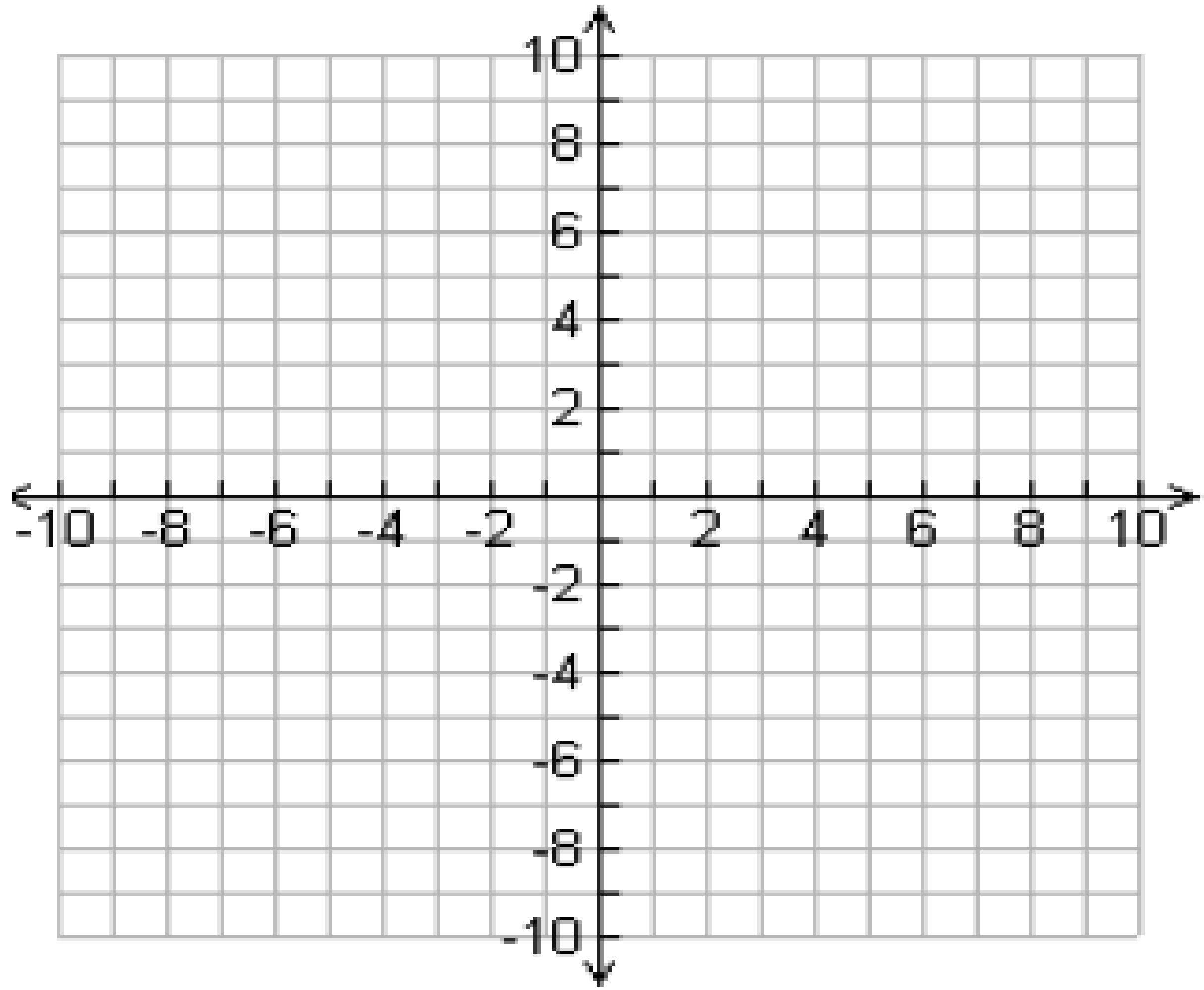
Discontinuities:

Ex. 2) $f(x)=\dfrac{2x^2-18}{x^2-2x-3}$

Horizontal/Oblique Asymptote:

Holes and/or Vertical Asymptotes:

X-Int.	Y-Int.



Domain:

Range:

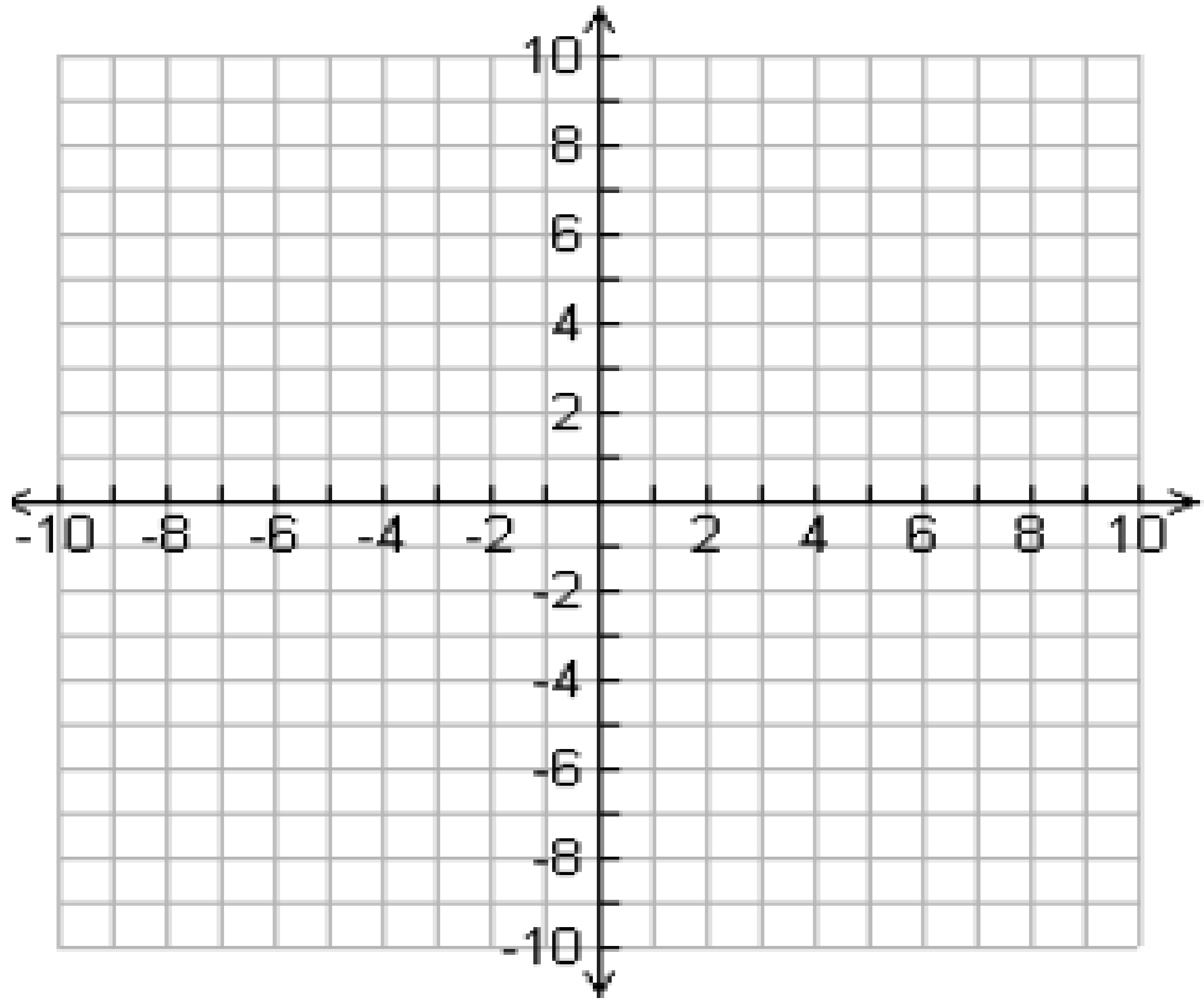
Discontinuities:

Ex. 3) $f(x) = \dfrac{x^2 - 3x + 2}{x^2 + x - 6}$

Horizontal/Oblique Asymptote:

Holes and/or Vertical Asymptotes:

X-Int.	Y-Int.



Domain:

Range:

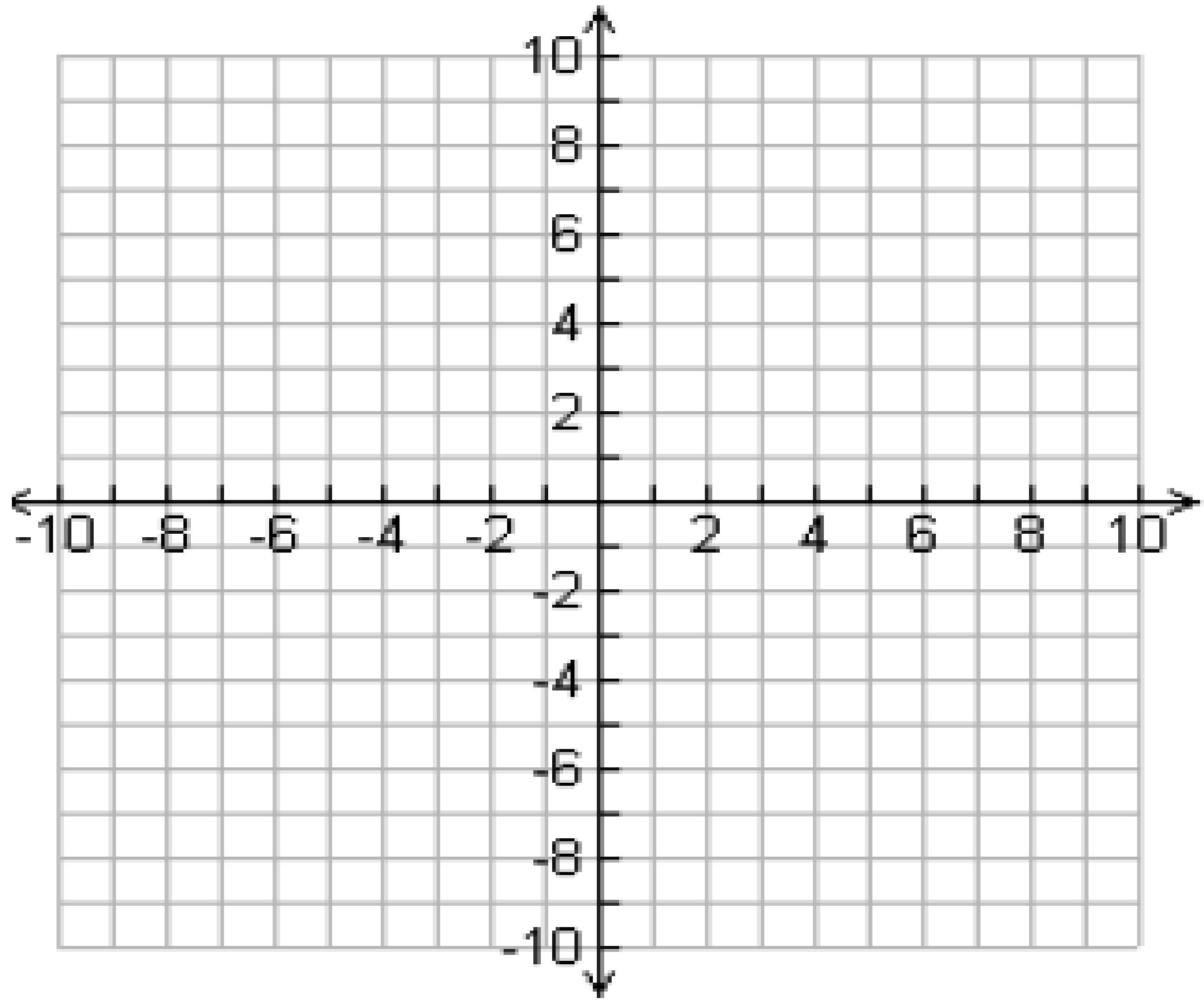
Discontinuities:

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

Horizontal/Oblique Asymptote:

Holes and/or Vertical Asymptotes:

X-Int.	Y-Int.



Domain:

Range:

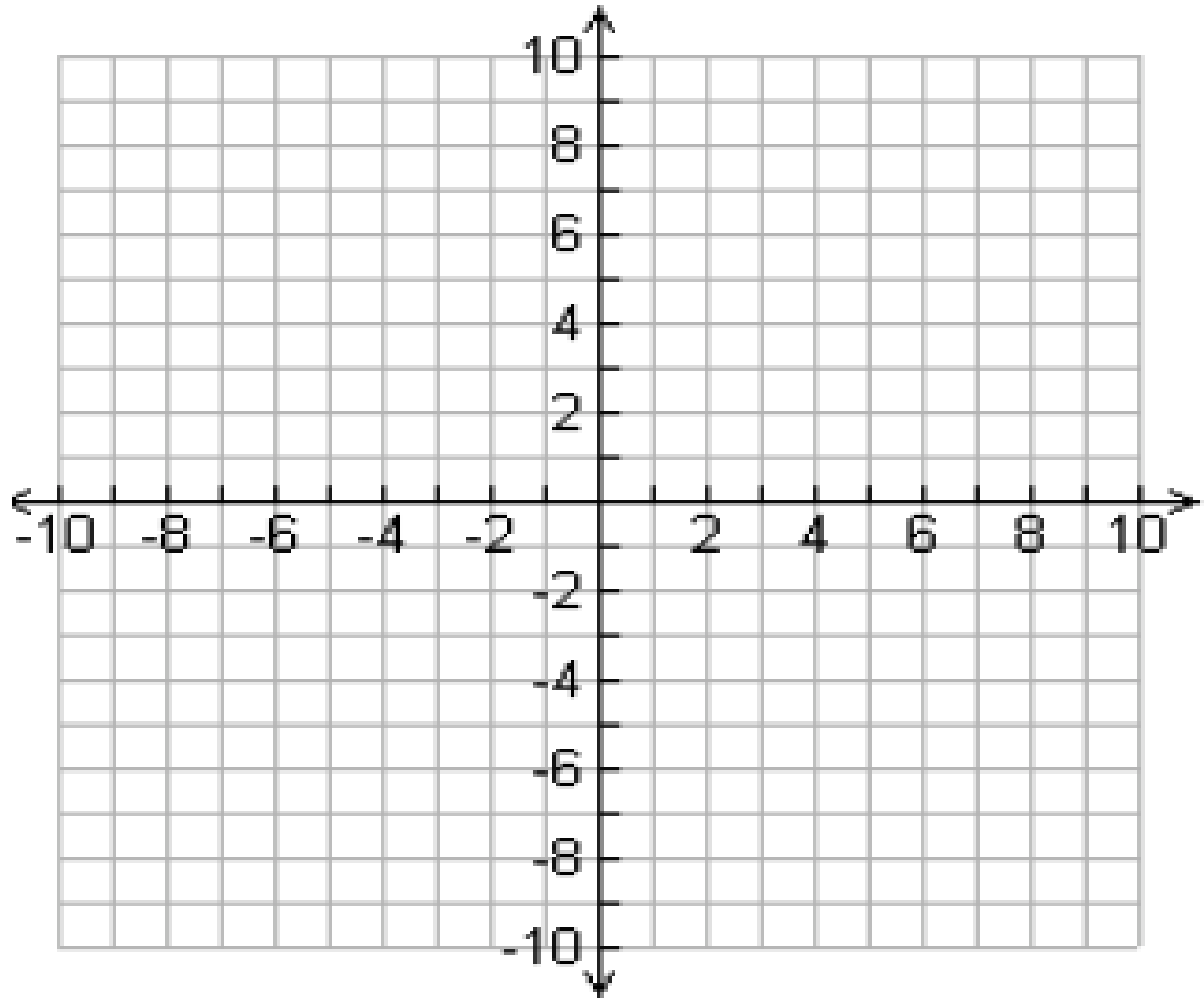
Discontinuities:

Ex. 5) $f(x)=\dfrac{x^2+1}{x-1}$

Horizontal/Oblique Asymptote:

Holes and/or Vertical Asymptotes:

X-Int.	Y-Int.



Discontinuities: