Rational Equations with Holes Video Examples   Name:_____ Date: _____
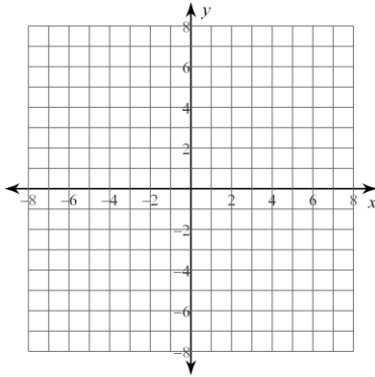
Directions: Follow along with the video to graph the vertical and horizontal asymptotes. Graph the x-intercepts and some helpful points, then sketch the graph. Show any "holes" in the graph. What is the domain? How can the "holes" be removed?

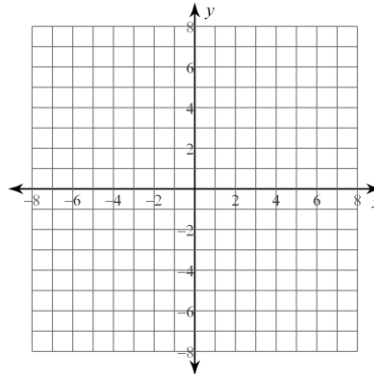**What is a point of discontinuity?** _____
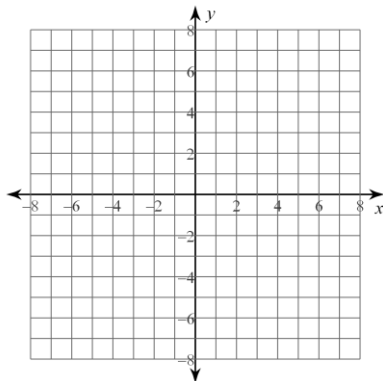
1. Consider:

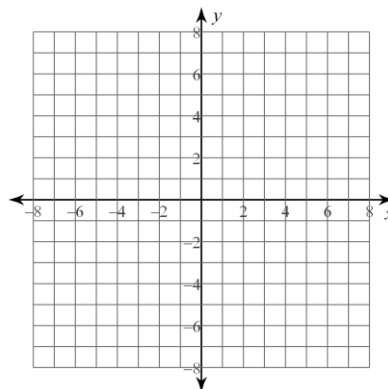$$f(x) = \frac{3}{x-2}$$

2.

$$f(x) = \frac{-x^2 - 2x + 8}{x^2 - 4}$$

3.

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

4.

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

Graph the vertical and horizontal asymptotes, x-intercepts, and some helpful points, then sketch the graph. Show any "holes" in the graph. How can the "holes" be removed? What is the domain?

State the domain and points of discontinuity.

1.	