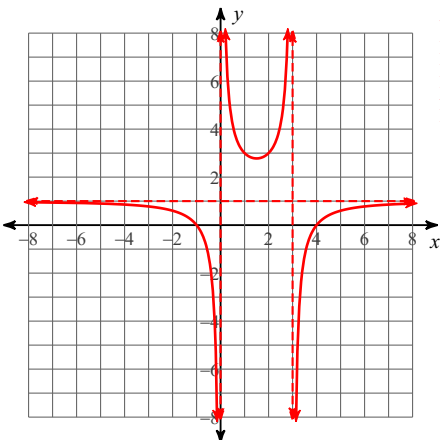


Rational Graphing Practice Problems

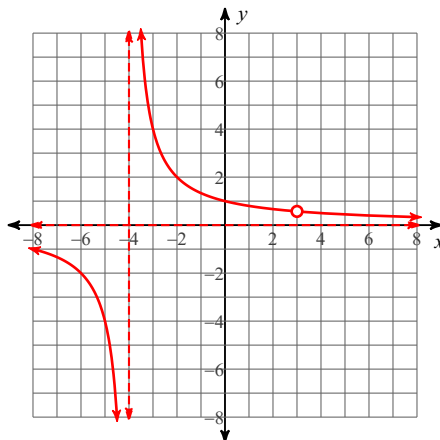
Identify the holes, vertical asymptotes, x-intercepts, horizontal asymptote, and domain of each. Then sketch the graph.

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



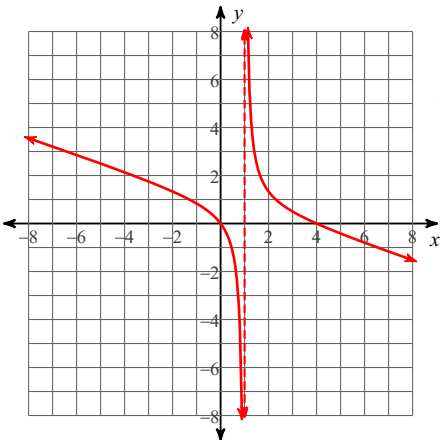
Vertical Asym.: $x = 0, x = 3$
 Holes: None
 Horz. Asym.: $y = 1$
 X-intercepts: $4, -1$
 Domain:
 All reals except $0, 3$

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



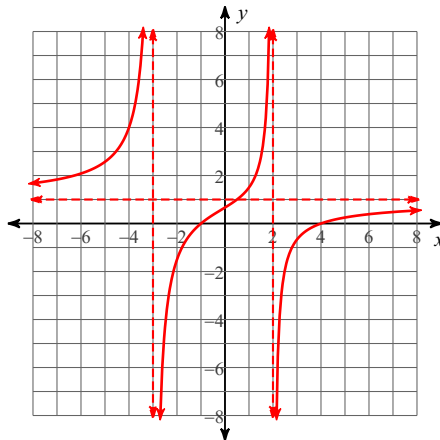
Vertical Asym.: $x = -4$
 Holes: $x = 3$
 Horz. Asym.: $y = 0$
 X-intercepts: None
 Domain:
 All reals except $-4, 3$

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



Vertical Asym.: $x = 1$
 Holes: None
 Horz. Asym.: None
 X-intercepts: $0, 4$
 Domain:
 All reals except 1

4) $f(x) = \frac{x^2 - 3x - 4}{x^2 + x - 6}$

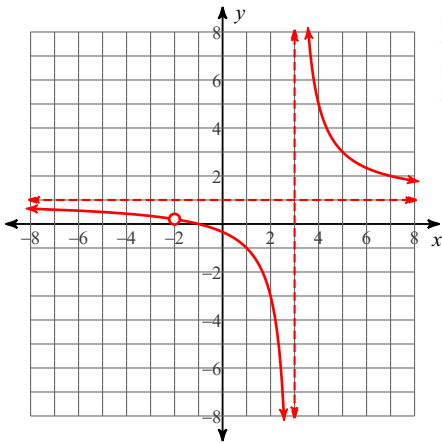


Vertical Asym.: $x = 2, x = -3$
 Holes: None
 Horz. Asym.: $y = 1$
 X-intercepts: $4, -1$
 Domain:
 All reals except $2, -3$

5) Homework: Pg 521 #13, 16, 20, 21, 24, 25, 28, 30, 33, 34; Pg 525 #7-12.

Identify the points of discontinuity (both holes and vertical asymptotes), and x and y-intercepts of each.

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



Discontinuities: 3, -2
Vertical Asym.: $x = 3$
Holes: $x = -2$
X-intercepts: -1