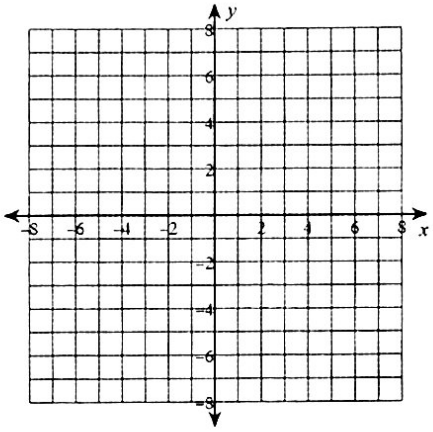
Secondary Math 3 Name_____

# 5.2 Graphing Rational Functions

Date_____ Period____

**Identify the points of discontinuity, holes, vertical asymptotes, x-intercepts, y-intercept, horizontal asymptote, and domain of each. Then sketch the graph.**

1) $f(x) = \dfrac{x^2 - 4}{2x^2 + 10x + 12}$




2) Vertical Asymptotes:

Holes:

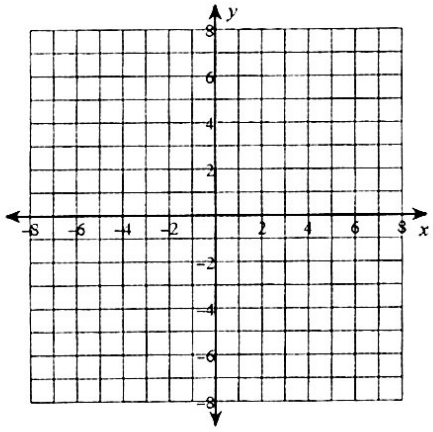
Horizontal Asymptotes:

x-intercepts:

y-intercepts:

Domain:

3) $f(x) = \dfrac{3x + 6}{x + 3}$




4) Vertical Asymptotes:

Holes:

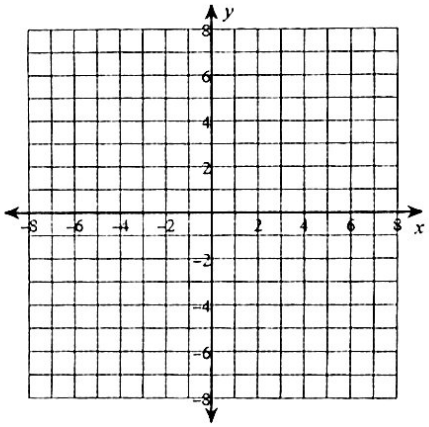
Horizontal Asymptotes:

x-intercepts:

y-intercepts:

Domain:

5) $f(x) = \dfrac{-x^2 + 4}{x^2 + 5x + 6}$




6) Vertical Asymptotes:

Holes:

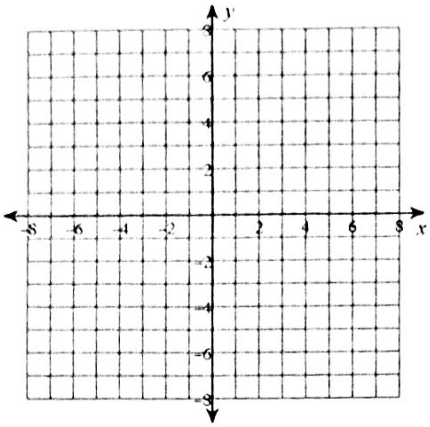
Horizontal Asymptotes:

x-intercepts:

y-intercepts:

Domain:

7) $f(x) = \dfrac{x+2}{x^2}$




8) Vertical Asymptotes:

Holes:

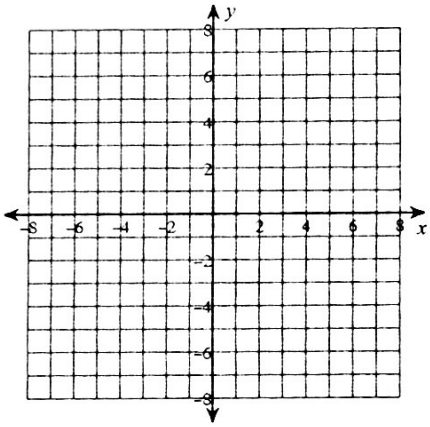
Horizontal Asymptotes:

x-intercepts:

y-intercepts:

Domain:

9) $f(x) = \dfrac{x-3}{4x+16}$




10) Vertical Asymptotes:

Holes:

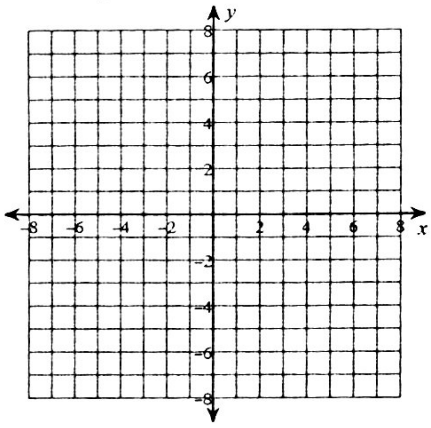
Horizontal Asymptotes:

x-intercepts:

y-intercepts:

Domain:

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




12) Vertical Asymptotes:

Holes:

Horizontal Asymptotes:

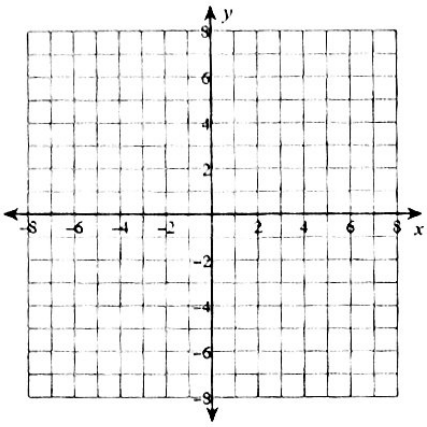
x-intercepts:

y-intercepts:

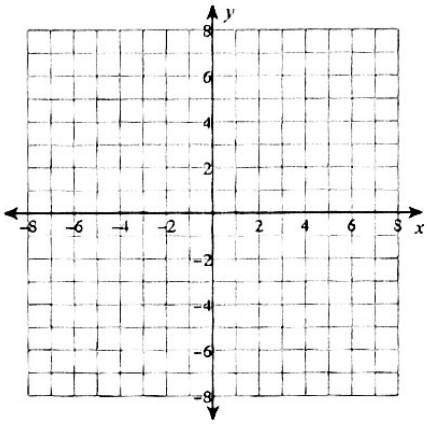
Domain:

**Graph each function.**

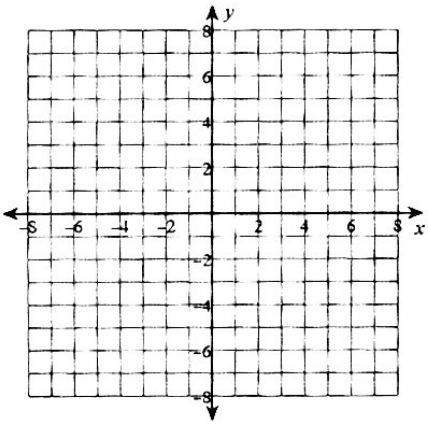
13) $f(x) = \dfrac{-x - 1}{x^2 - 3x}$




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




15) $f(x) = \dfrac{-x^2 - 4x}{x^2 - 2x - 3}$




16) $f(x) = \dfrac{-3x^2 + 6x + 9}{x^2 - x - 2}$