1. Given: $f(x) = \frac{x^2-9}{2x^2+25}$
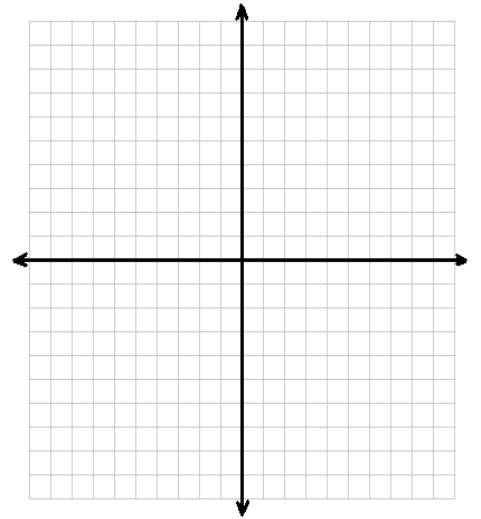
a) Find the x-intercept

b) Find the y-intercept

c) Find the vertical asymptote(s)

d) Find the horizontal asymptote

e) Sign Chart

f) Graph

2. Given $f(x) = \frac{x}{x^2+2x+1}$
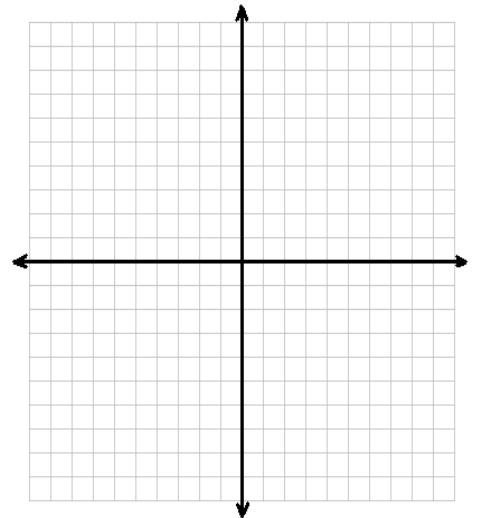
a) Find the x-intercept

b) Find the y-intercept

c) Find the vertical asymptote(s)

d) Find the horizontal asymptote

e) Sign Chart

f) Graph

3. Given: $y = \dfrac{3x^2 - 11x - 4}{4x^2 - 25}$

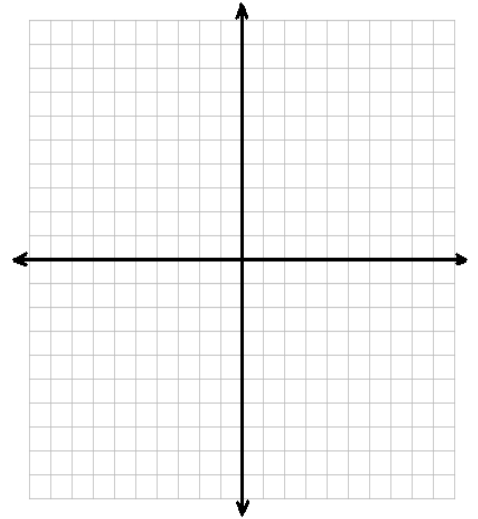a) Find the x-intercept

b) Find the y-intercept

c) Find the vertical asymptote(s)

d) Find the horizontal asymptote

e) Sign Chart

f) Graph

4. Find the product or quotient and state the domain.

a) $\dfrac{x^2 + 8x}{x^3 + 5x^2 - 24x} \cdot (x^3 + 2x^2 - 15x)$

b) $\dfrac{x^2 - 36}{x^2 - 3x - 18} \div \dfrac{x^2 + 2x - 24}{x^2 + 7x + 12}$

5. Find the sum or difference.

a) $\dfrac{6x}{x^2 - 8x} + \dfrac{4}{2x - 16}$

b) $\dfrac{4x}{x^2 - 1} - \dfrac{4}{x - 1}$

c) $\dfrac{y - 1}{3y + 15} - \dfrac{y + 3}{5y + 25}$

6. Solve.

a) $\dfrac{9}{x - 1} = 3$

b) $-\dfrac{4}{3} + \dfrac{2}{x} = 8$

c) $-8 + \dfrac{64}{x - 8} = \dfrac{x^2}{x - 8}$