6.3 Graphing Rational Functions

2023-2024

SCORE: /

Name _____ Date _____ Period _____

Use the following information to graph the rational equations without technology and determine the domain.

1. $f(x) = \frac{1}{x-6}$

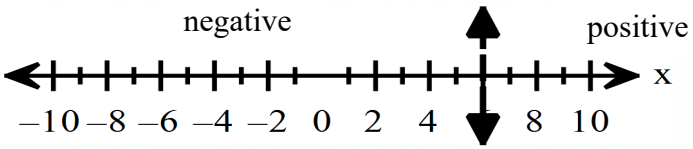
vertical asymptote: $\boldsymbol{x = 6}$

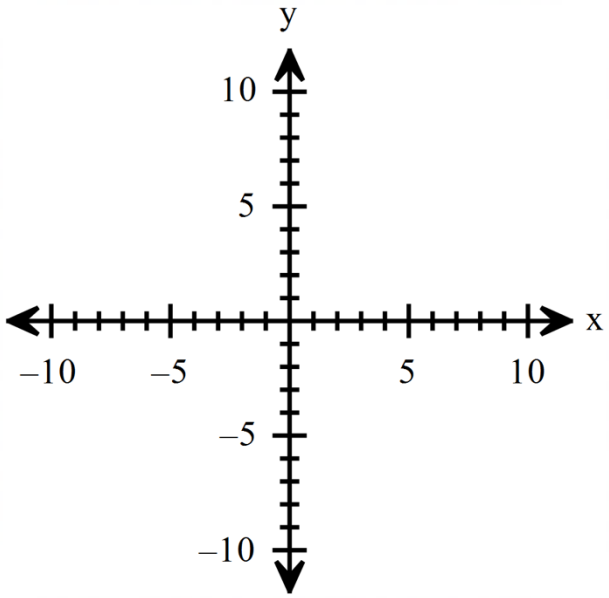
horizontal asymptote: $\boldsymbol{y = 0}$

x-intercept: **NONE**

y-intercept: $\left(\mathbf{0}, -\frac{\mathbf{1}}{\mathbf{6}}\right)$

Domain: _____





2. $f(x) = \frac{x^2+x-30}{3x^2-12}$

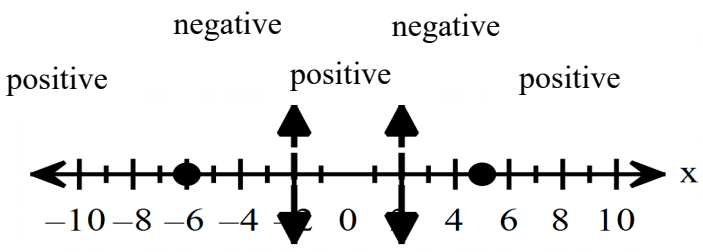
vertical asymptotes: $\boldsymbol{x = 2},\ \boldsymbol{x = -2}$

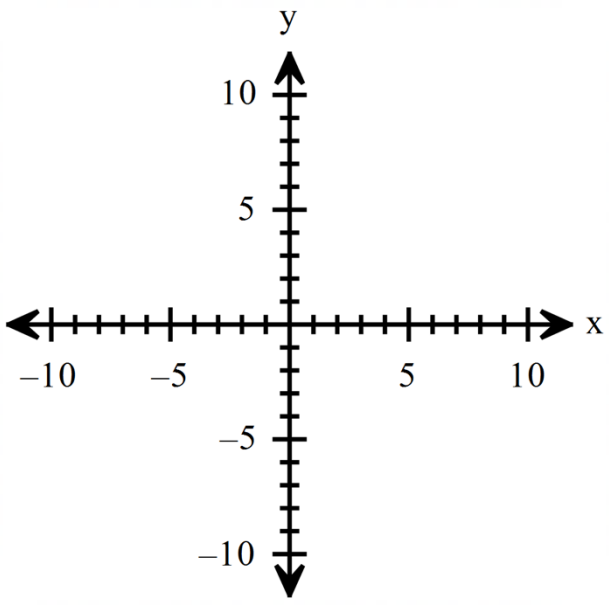
horizontal asymptotes: $\boldsymbol{y = \frac{1}{3}}$

x-intercepts: $(\mathbf{-6}, \mathbf{0}),\ (\mathbf{5}, \mathbf{0})$

y-intercepts: $\left(\mathbf{0}, \frac{\mathbf{5}}{\mathbf{2}}\right)$

Domain: _____





Graph each rational function without technology.

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

Vertical Asymptote: _____

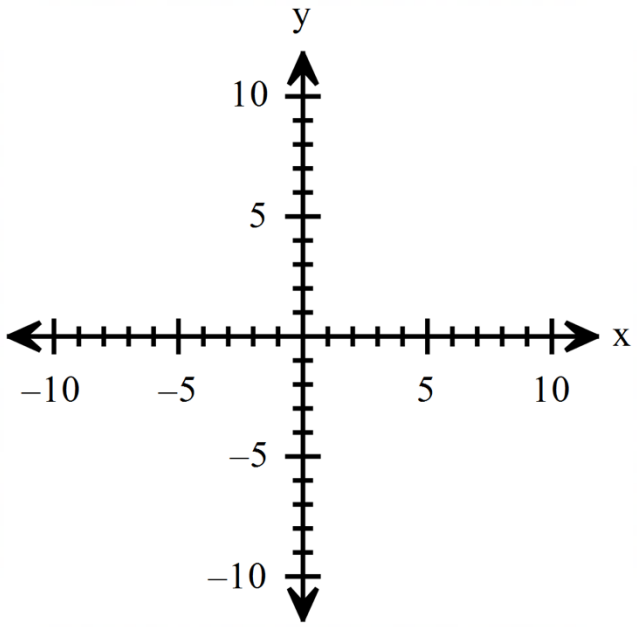
Domain: _____

Horizontal Asymptote: _____

x-intercept: _____

y-intercept: _____

Sign array: 



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

Vertical Asymptote: _____

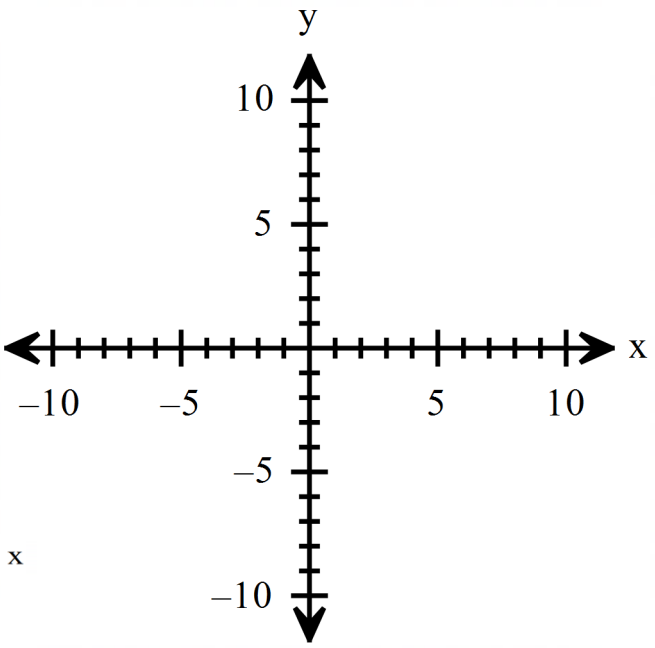
Domain: _____

Horizontal Asymptote: _____

x-intercept: _____

y-intercept: _____

Sign array: 



5. $f(x) = \frac{x+1}{(2x-1)(x+3)}$

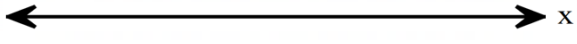
Vertical Asymptote: _____

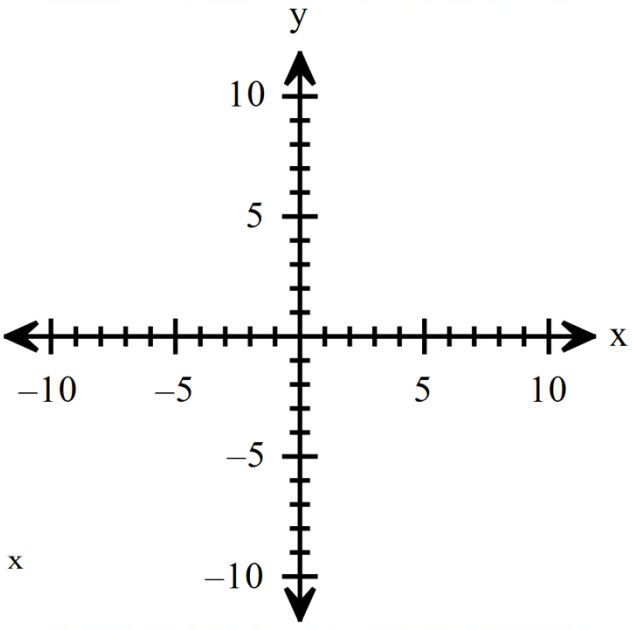
Domain: _____

Horizontal Asymptote: _____

x-intercept: _____

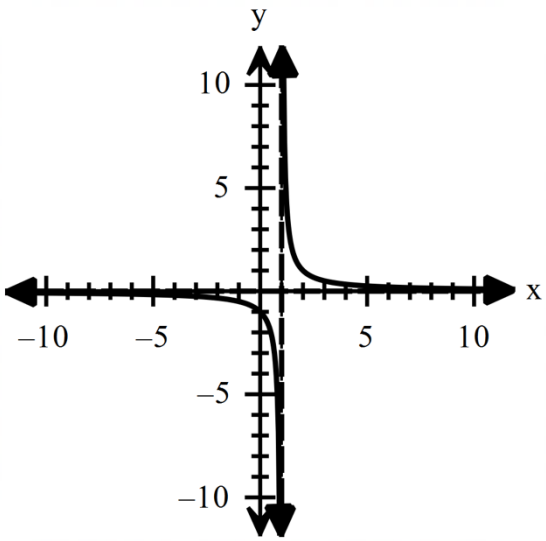
y-intercept: _____

Sign array: 



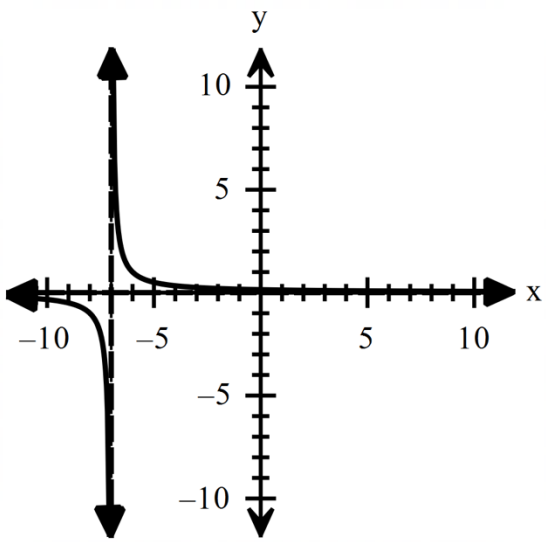
Given the following graph, write an equation for the function.

6.



Equation: _____

7.



Equation: _____

Graph the following equations.

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

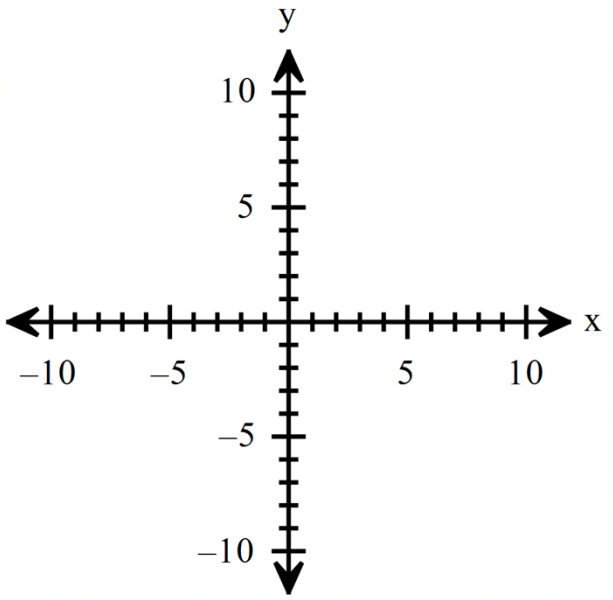
Vertical Asymptote: _____

Domain: _____

Horizontal Asymptote: _____

x-intercept: _____

y-intercept: _____



9. $f(x) = \frac{2x-3}{x^2-5x+4}$

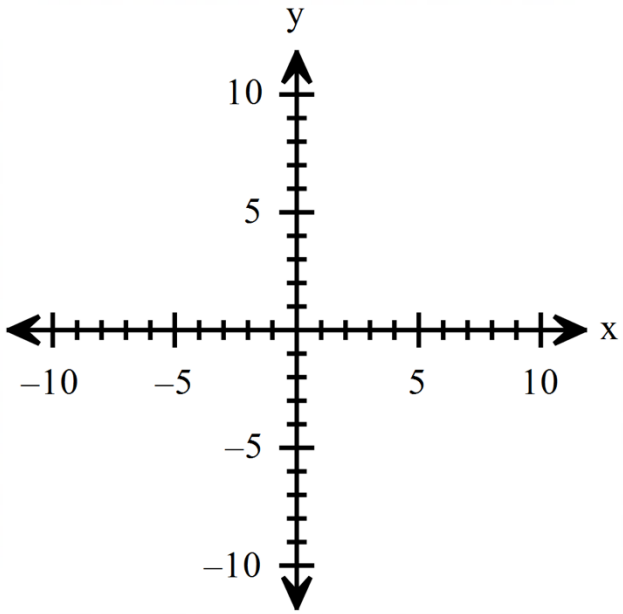
Vertical Asymptote: _____

Domain: _____

Horizontal Asymptote: _____

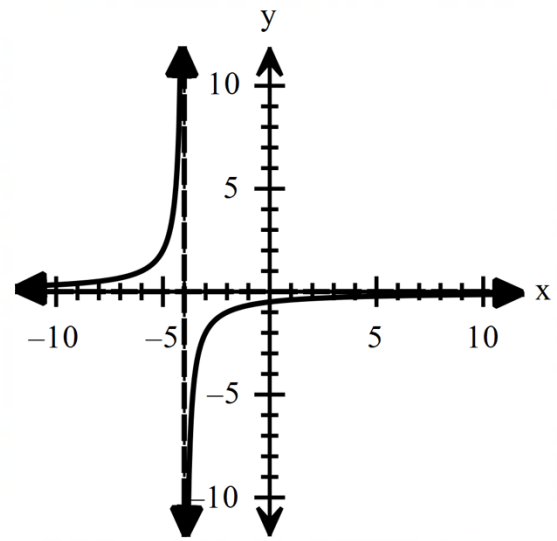
x-intercept: _____

y-intercept: _____



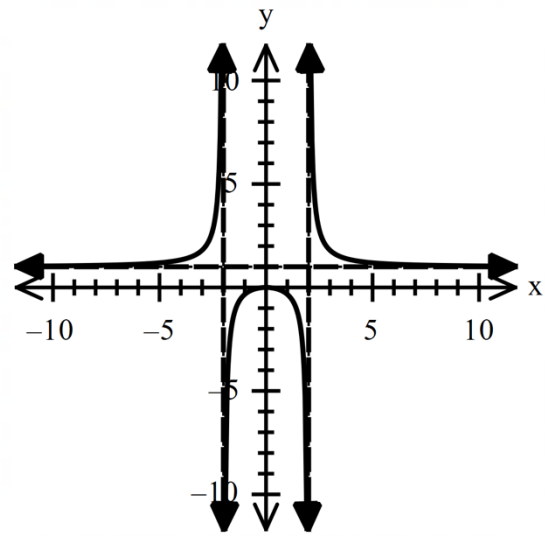
Given the following graph, write an equation for the function.

10.



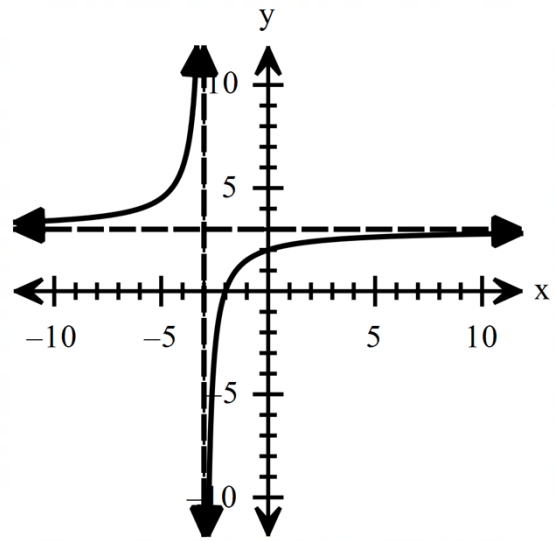
Equation: _____

11.



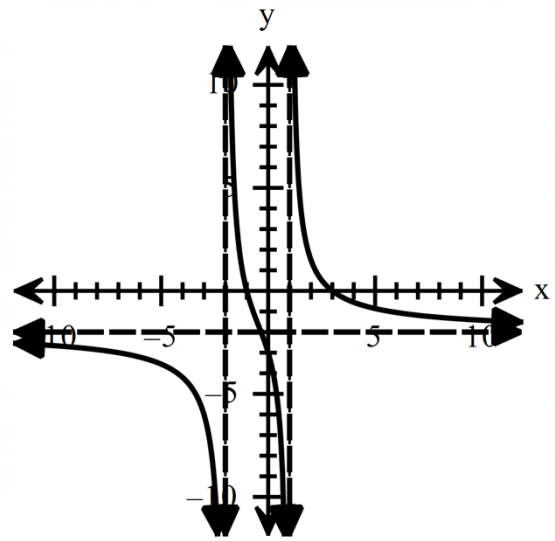
Equation: _____

12.



Equation: _____

13.



Equation: _____