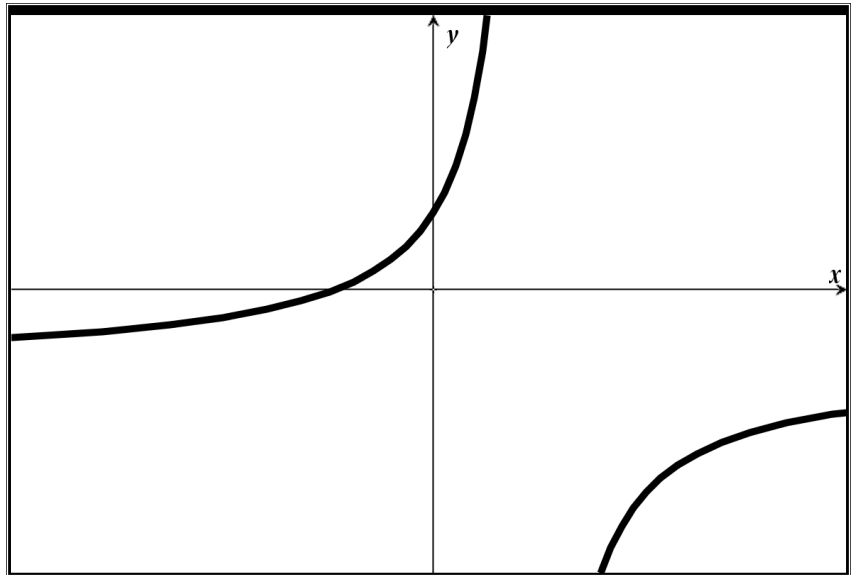1. $f(x) = \dfrac{-x^2-4x-4}{x^2-4} = \dfrac{-1(x+2)(x+2)}{(x-2)(x+2)}$

Completely simplified function (if simplification is possible)	X intercept(s) State as a point	Y intercept State as a point	Vertical Asymptote(s) State as a line	Horizontal Asymptote State as a line	Hole(s) State as a point

2. Label the given graph with the points, holes, and asymptotes from the table above
   Hole and Points need coordinates
   Asymptotes need equations of lines

   Show any necessary work here

3. State the domain of the rational function using two different methods

   Method 1

   Method 2

4. Complete the behavior statements with the appropriate value of y or +∞ or -∞

   As x → -2⁻ y →_____
   (this asks as x approaches -2 from the left, what y value does the function approach?)

   As x → 2⁺ y →_____
   (this asks as x approaches 2 from the right, what y value does the function approach?)

   As x → -∞ y →_____
   (this asks "what is the left end behavior of the function?")

   As x → ∞ y →_____
   (this asks "what is the right end behavior of the function?")

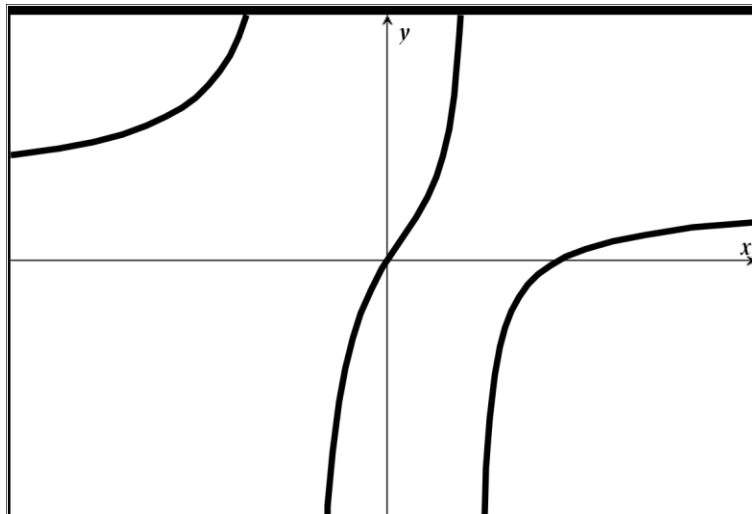5. $g(x) = \dfrac{x^2 - 4x}{x^2 - 4} = \dfrac{x(x-4)}{(x-2)(x+2)}$

Completely simplified function (if simplification is possible)	X intercept(s) State as a point	Y intercept State as a point	Vertical Asymptote(s) State as a line	Horizontal Asymptote State as a line	Hole(s) State as a point

6. Label the given graph with the points, holes, and asymptotes from the table above
   Hole and Points need coordinates
   Asymptotes need equations of lines

   Show any necessary work here

7. State the domain of the rational function using two different methods

   Method 1

   Method 2

8. Complete the behavior statements with the appropriate value of y or +∞ or -∞

   As x → -2⁻ y → _____
   (this asks as x approaches -2 from the left, what y value does the function approach?)

   As x → 4⁺ y → _____
   (this asks as x approaches 4 from the right, what y value does the function approach?)

   As x → -∞ y → _____
   (this asks "what is the left end behavior of the function?)

   As x → ∞ y → _____
   (this asks "what is the right end behavior of the function?)

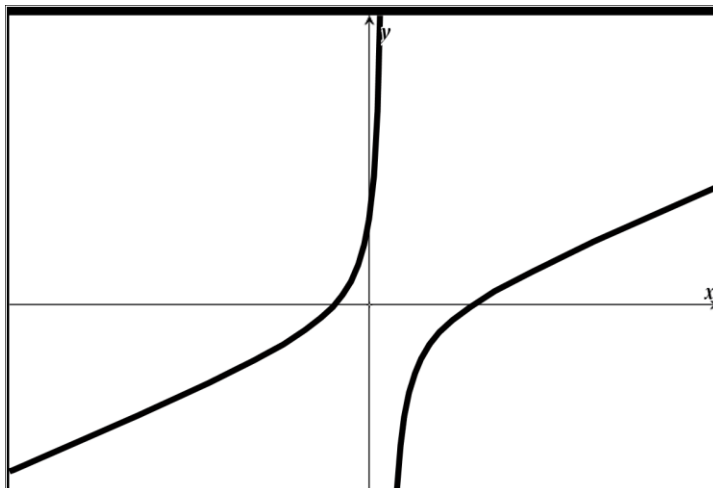9. $h(x) = \dfrac{x^3 - 4x^2 - 12x}{x^2 - x} = \dfrac{x(x-6)(x+2)}{x(x-1)}$

Completely simplified function (if simplification is possible)	X intercept(s) State as a point	Y intercept State as a point	Vertical Asymptote(s) State as a line	Horizontal Asymptote State as a line	Hole(s) State as a point

10. Label the given graph with the points, holes, and asymptotes from the table above
    Hole and Points need coordinates
    Asymptotes need equations of lines

    Show any necessary work here

11. State the domain of the rational function using two different methods

    Method 1

    Method 2

12. Complete the behavior statements with the appropriate value of y or +∞ or -∞

    As x → 1⁻ y →_____
    (this asks as x approaches 1 from the left, what y value does the function approach?)

    As x → 0⁺ y →_____
    (this asks as x approaches 0 from the right, what y value does the function approach?)

    As x → -∞ y →_____
    (this asks "what is the left end behavior of the function?)

    As x → ∞ y →_____
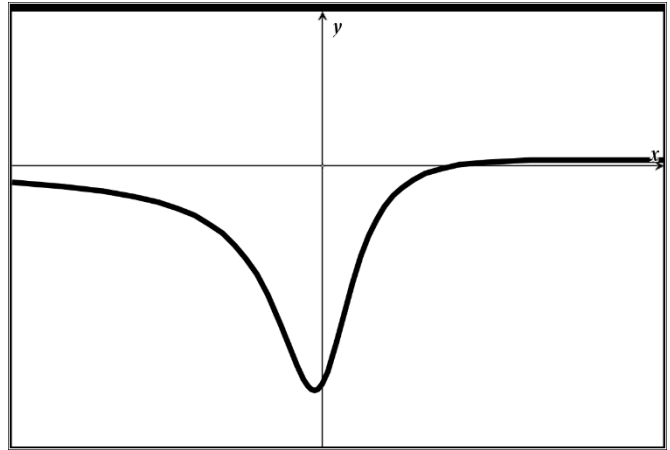   (this asks "what is the right end behavior of the function?)

13. $j(x) = \dfrac{x^2-4x}{4x^3+8x} = \dfrac{x(x-4)}{4x(x^2+8)}$

Completely simplified function (if simplification is possible)	X intercept(s) State as a point	Y intercept State as a point	Vertical Asymptote(s) State as a line	Horizontal Asymptote State as a line	Hole(s) State as a point

14. Label the given graph with the points, holes, and asymptotes from the table above
   Hole and Points need coordinates
   Asymptotes need equations of lines

   Show any necessary work here

15. State the domain of the rational function using two different methods

   Method 1

   Method 2

16. Complete the behavior statements with the appropriate value of y or +∞ or -∞

   As x → 5⁻ y → _____
   (this asks as x approaches 1 from the left, what y value does the function approach?)

   As x → 0⁺ y → _____
   (this asks as x approaches 0 from the right, what y value does the function approach?)

   As x → -∞ y → _____
   (this asks "what is the left end behavior of the function?)

   As x → ∞ y → _____
   (this asks "what is the right end behavior of the function?)