Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Formative Assessment Rational Function Parts, Graphs, & Behavior Period\_\_\_\_\_\_\_\_\_

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

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

1. 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

|  |  |
| --- | --- |
| 1. State the domain of the rational function using two different methods

Method 1 Method 2  | 1. 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?) |

1. $g\left(x\right)=\frac{x^{2}-4x}{x^{2}-4}=\frac{x(x-4)}{(x-2)(x+2)}$

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

1. Label the given graph with the points, holes, and asymptotes from the table above

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|  |  |
| --- | --- |
| 1. State the domain of the rational function using two different methods

Method 1 Method 2  | 1. 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?) |

1. $h\left(x\right)=\frac{x^{3}-4x^{2}-12x}{x^{2}-x}=\frac{x(x-6)(x+2)}{x(x-1)}$

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

1. 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

|  |  |
| --- | --- |
| 1. State the domain of the rational function using two different methods

Method 1 Method 2  | 1. 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?) |

1. $j\left(x\right)=\frac{x^{2}-4x}{4x^{3}+8x}=\frac{x(x-4)}{4x(x^{2}+8)}$

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

1. 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

|  |  |
| --- | --- |
| 1. State the domain of the rational function using two different methods

Method 1 Method 2  | 1. 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?) |