Algebra II Graphing rational functions. Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Identify the holes, vertical asymptotes, x-intercepts, horizontal asymptotes, and domain and range of each. Then sketch the graph.

$$y=\frac{2x+4}{x-3}$$

|  |  |
| --- | --- |
| VA |  |
| HA |  |
| X int |  |
| Y int |  |
| Holes |  |
| Domain |  |
| Range |  |

|  |  |
| --- | --- |
| x | y |
|  |  |
|  |  |
|  |  |
|  |  |

2. Identify the holes, vertical asymptotes, x-intercepts, horizontal asymptotes, and domain and range of each. Then sketch the graph.

$ y=\frac{-3x+9}{x-2}$

|  |  |
| --- | --- |
| VA |  |
| HA |  |
| Xint |  |
| Y int |  |
| Holes |  |
| Domain  |  |
| Range |  |

|  |  |
| --- | --- |
| x | y |
|  |  |
|  |  |
|  |  |
|  |  |

3. Identify the holes, vertical asymptotes, x-intercepts, horizontal asymptotes, and domain and range of each. Then sketch the graph.

$$y=\frac{1}{-1(x+4)}$$

|  |  |
| --- | --- |
| VA |  |
| HA |  |
| X int |  |
| Y int |  |
| Holes |  |
| Domain |  |
| Range |  |

|  |  |
| --- | --- |
| x | y |
|  |  |
|  |  |
|  |  |

4. Identify the holes, vertical asymptotes, x-intercepts, horizontal asymptotes, and domain and range of each. Then sketch the graph.

$$y=\frac{x^{2}+x-6}{x^{2}-6x+8}$$

|  |  |
| --- | --- |
| VA |  |
| HA |  |
| X int |  |
| Y int |  |
| Holes |  |
| Domain |  |
| Range |  |

|  |  |
| --- | --- |
| x | y |
|  |  |
|  |  |
|  |  |

5. Identify the holes, vertical asymptotes, x-intercepts, horizontal asymptotes, and domain and range of each. Then sketch the graph.

$$y=\frac{3(x-2)}{x^{2}+3x-10}$$

|  |  |
| --- | --- |
| VA |  |
| HA |  |
| X int |  |
| Y int |  |
| Holes |  |
| Domain |  |
| Range |  |

|  |  |
| --- | --- |
| x | y |
|  |  |
|  |  |
|  |  |

6. Identify the holes, vertical asymptotes, x-intercepts, horizontal asymptotes, and domain and range of each. Then sketch the graph.

$$y=\frac{(x+3)(x-5)}{(x+2)(x-5)}$$

|  |  |
| --- | --- |
| VA |  |
| HA |  |
| X int |  |
| Y int |  |
| Holes |  |
| Domain |  |
| Range |  |

|  |  |
| --- | --- |
| x | y |
|  |  |
|  |  |
|  |  |

7. Given the holes, vertical asymptotes, x-intercepts, and horizontal asymptote of each, find the equation.

$y=$

|  |  |
| --- | --- |
| VA | X=-6 |
| HA | Y=1 |
| X int | X=-4 |
| Y int | Y=2/3 |
| Holes | X=2 |

8. Given the holes, vertical asymptotes, x-intercepts, and horizontal asymptote of each, find the equation.

$y=$

|  |  |
| --- | --- |
| VA | X=3 |
| HA | none |
| Xint | Y=0 |
| Y int | Y=0 |
| Holes | X=-3 |