RATIONAL FUNCTIONS – ACTIVITY (A)

**OBJECTIVE:**

In this activity, students will work cooperatively in a group of four persons each (a quartet), to analyze the given rational function. Students will factor the rational functions, find their x and y intercepts and horizontal and vertical asymptotes, all also graph the function.

|  |  |
| --- | --- |
| **GIVEN:** | **NAMES:**  Student 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 3: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 4: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Student 1: Find the domain of the function.** | **Student 2: Find the range of the function.** |
| **Student 3: Find the of .** | **Student 4: Find the of .** |
| **Student 1: Graph the function.**  **Student 2: Locate (P) on the graph.**  **Student 3: Identify the horizontal asymptote.**  **Student 4: Identify the vertical asymptote.** |  |

RATIONAL FUNCTIONS – ACTIVITY (B)

**OBJECTIVE:**

In this activity, students will work cooperatively in a group of four persons each (a quartet), to analyze the given rational function. Students will factor the rational functions, find their x and y intercepts and horizontal and vertical asymptotes, all also graph the function.

|  |  |
| --- | --- |
| **GIVEN:** | **NAMES:**  Student 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 3: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 4: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Student 1: Find the domain of the function.** | **Student 2: Find the range of the function.** |
| **Student 3: Find the of .** | **Student 4: Find the of .** |
| **Student 1: Graph the function.**  **Student 2: Locate (P) on the graph.**  **Student 3: Identify the horizontal asymptote.**  **Student 4: Identify the vertical asymptote.** |  |

RATIONAL FUNCTIONS – ACTIVITY (C)

**OBJECTIVE:**

In this activity, students will work cooperatively in a group of four persons each (a quartet), to analyze the given rational function. Students will factor the rational functions, find their x and y intercepts and horizontal and vertical asymptotes, all also graph the function.

|  |  |
| --- | --- |
| **GIVEN:** | **NAMES:**  Student 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 3: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 4: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Student 1: Find the domain of the function.** | **Student 2: Find the range of the function.** |
| **Student 3: Find the of .** | **Student 4: Find the of .** |
| **Student 1: Graph the function.**  **Student 2: Locate (P) on the graph.**  **Student 3: Identify the horizontal asymptote.**  **Student 4: Identify the vertical asymptote.** |  |

RATIONAL FUNCTIONS – ACTIVITY (D)

**OBJECTIVE:**

In this activity, students will work cooperatively in a group of four persons each (a quartet), to analyze the given rational function. Students will factor the rational functions, find their x and y intercepts and horizontal and vertical asymptotes, all also graph the function.

|  |  |
| --- | --- |
| **GIVEN:** | **NAMES:**  Student 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 3: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 4: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Student 1: Find the domain of the function.** | **Student 2: Find the range of the function.** |
| **Student 3: Find the of .** | **Student 4: Find the of .** |
| **Student 1: Graph the function.**  **Student 2: Locate (P) on the graph.**  **Student 3: Identify the horizontal asymptote.**  **Student 4: Identify the vertical asymptote.** |  |

RATIONAL FUNCTIONS – ACTIVITY (E)

**OBJECTIVE:**

In this activity, students will work cooperatively in a group of four persons each (a quartet), to analyze the given rational function. Students will factor the rational functions, find their x and y intercepts and horizontal and vertical asymptotes, all also graph the function.

|  |  |
| --- | --- |
| **GIVEN:** | **NAMES:**  Student 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 3: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 4: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Student 1: Find the domain of the function.** | **Student 2: Find the range of the function.** |
| **Student 3: Find the of .** | **Student 4: Find the of .** |
| **Student 1: Graph the function.**  **Student 2: Locate (P) on the graph.**  **Student 3: Identify the horizontal asymptote.**  **Student 4: Identify the vertical asymptote.** |  |

RATIONAL FUNCTIONS – ACTIVITY (A)

**OBJECTIVE:**

In this activity, students will work cooperatively in a group of four persons each (a quartet), to analyze the given rational function. Students will factor the rational functions, find their x and y intercepts and horizontal and vertical asymptotes, all also graph the function.  
**Answers**

|  |  |
| --- | --- |
| **GIVEN:** | **NAMES:**  Student 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 3: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 4: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Student 1: Find the domain of the function.**  **Solution:** Domain = R zero of the denominator  Zero of denominator:  Domain = | **Student 2: Find the range of the function.**  **Solution:** Range = R    Range = |
| **Student 3: Find the of .**  **Solution:** Set | **Student 4: Find the of .**  **Solution:** Set |
| **Student 1: Graph the function.**  **Student 2: Locate (P) on the graph.**  **Student 3: Identify the horizontal asymptote.**  **Student 4: Identify the vertical asymptote.** |  |

RATIONAL FUNCTIONS – ACTIVITY (B)

**OBJECTIVE:**

In this activity, students will work cooperatively in a group of four persons each (a quartet), to analyze the given rational function. Students will factor the rational functions, find their x and y intercepts and horizontal and vertical asymptotes, all also graph the function.  
**Answers**

|  |  |
| --- | --- |
| **GIVEN:** | **NAMES:**  Student 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 3: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 4: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Student 1: Find the domain of the function.**  **Solution:** Domain = R zeros of the denominator  Zeros of denominator:  ;  Domain = | **Student 2: Find the range of the function.**  **Solution:** Range = R {    Range = |
| **Student 3: Find the of .**  **Solution:** Set   ,  Since and | **Student 4: Find the of .**  **Solution:** Set |
| **Student 1: Graph the function.**  **Student 2: Locate (P) on the graph.**  **Student 3: Identify the horizontal asymptote.**  **Student 4: Identify the vertical asymptote.** |  |

RATIONAL FUNCTIONS – ACTIVITY (C)

**OBJECTIVE:**

In this activity, students will work cooperatively in a group of four persons each (a quartet), to analyze the given rational function. Students will factor the rational functions, find their x and y intercepts and horizontal and vertical asymptotes, all also graph the function.  
**Answers**

|  |  |
| --- | --- |
| **GIVEN:** | **NAMES:**  Student 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 3: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 4: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Student 1: Find the domain of the function.**  **Solution:** Domain = R zeros of the denominator  Zeros of denominator:  ;  Domain = | **Student 2: Find the range of the function.**  **Solution:** Range = R {    Range = |
| **Student 3: Find the of .**  **Solution:** Set  , Since and | **Student 4: Find the of .**  **Solution:** Set |
| **Student 1: Graph the function.**  **Student 2: Locate (P) on the graph.**  **Student 3: Identify the horizontal asymptote.**  **Student 4: Identify the vertical asymptote.** |  |

RATIONAL FUNCTIONS – ACTIVITY (D)

**OBJECTIVE:**

In this activity, students will work cooperatively in a group of four persons each (a quartet), to analyze the given rational function. Students will factor the rational functions, find their x and y intercepts and horizontal and vertical asymptotes, all also graph the function.  
**Answers**

|  |  |
| --- | --- |
| **GIVEN:** | **NAMES:**  Student 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 3: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 4: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Student 1: Find the domain of the function.**  **Solution:** Domain = R zeros of the denominator  Zeros of denominator:  Domain = | **Student 2: Find the range of the function.**  **Solution:** Range = R {    Range = |
| **Student 3: Find the of .**  **Solution:** Set  , Since and | **Student 4: Find the of .**  **Solution:** Set |
| **Student 1: Graph the function.**  **Student 2: Locate (P) on the graph.**  **Student 3: Identify the horizontal asymptote.**  **Student 4: Identify the vertical asymptote.** |  |

RATIONAL FUNCTIONS – ACTIVITY (E)

**OBJECTIVE:**

In this activity, students will work cooperatively in a group of four persons each (a quartet), to analyze the given rational function. Students will factor the rational functions, find their x and y intercepts and horizontal and vertical asymptotes, all also graph the function.  
**Answers**

|  |  |
| --- | --- |
| **GIVEN:** | **NAMES:**  Student 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 3: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Student 4: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Student 1: Find the domain of the function.**  **Solution:** Domain = R zeros of the denominator  Zeros of denominator:    Domain = | **Student 2: Find the range of the function.**  **Solution:** Range = R {    Range = |
| **Student 3: Find the of .**  **Solution:** Set  Since   **does not exist** | **Student 4: Find the of .**  **Solution:** Set |
| **Student 1: Graph the function.**  **Student 2: Locate (P) on the graph.**  **Student 3: Identify the horizontal asymptote.**  **Student 4: Identify the vertical asymptote.** |  |