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.

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| **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.

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| **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.

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| **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.

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| **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.

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| **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**

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| **GIVEN:** | **NAMES:**Student 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Student 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Student 3: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Student 4: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Student 1: Find the domain of the function.****Solution:** Domain = R zero of the denominatorZero 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 denominatorZeros 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 denominatorZeros 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 denominatorZeros 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 denominatorZeros 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.** |   |