Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Complete the following table using each polynomial function:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Function** | **Leading Coeff (+ or -)** | **Degree** | **End Behavior** |
| 1.
 |  |  | As As $x\rightarrow -\infty f(x)\rightarrow \\_\\_\\_\\_\\_\\_\\_$ |
| 1.
 |  |  | As As  |
| 1.
 |  |  | As As  |
| 1.
 |  |  | As As  |
| 1.
 |  |  | As As  |

**Use the equations to answer the following:**

|  |  |  |
| --- | --- | --- |
| **Function** | **Degree** | **Max # of Extrema**  |
| 1.
 |  |  |
| 1.
 |  |  |
| 1.
 |  |  |

**Given the graphs, state the Max # of Extrema and the Least Possible Degree**

|  |  |
| --- | --- |
| 1. [image]

 # of Extrema  \_\_\_\_\_\_\_\_\_\_Least possible degree\_\_\_\_\_\_\_\_\_\_\_ | 1.

# of Extrema  \_\_\_\_\_\_\_\_\_\_Least possible degree \_\_\_\_\_\_\_\_\_\_ |

**Determine the end behavior and maximum number of extrema (u-turns) w/o calculator:**

|  |  |
| --- | --- |
| 1.
 | 1.
 |
| 1.
 | 1.
 |

**Find the number of zeros, y-int, & end behavior. Sketch the graph:**

|  |  |
| --- | --- |
| 1.

# of Zeros: \_\_\_\_\_\_\_\_\_\_ Y-Int: \_\_\_\_\_\_\_\_\_\_\_\_ | 1.

# of Zeros: \_\_\_\_\_\_\_\_ Y-Int: \_\_\_\_\_\_\_\_\_\_\_\_\_ |

|  |  |
| --- | --- |
| Domain: | Range: |
| Increasing: | Decreasing: |
| x-intercepts: | y-intercept: |
| Abs. Max: | Abs. Min: |
| Rel. Max: | Rel. Min: |
| Min. degree | Sign of leading Coeff. |

**Answer all of the following questions for the following graph:**

 (0, 3)

(1.5, -15)

(-1.5, -15)