Homework 4.9: Writing Polynomials Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Math 3

**Directions:** State whether (x – 3) is a factor.

1. 
2. 
3. 

**Directions:** Write the polynomial function in standard form when given the leading coefficient and the zeros of the function.

1. 
2. 
3. 

|  |  |  |
| --- | --- | --- |
| 1.
 | Function:  | Graph:  |
| **End Behavior:****Roots (with Multiplicity):****Value of the leading coefficient:** **Domain: Range:** |

**Directions:** Without using technology, sketch the graph of the polynomial function described.

1. A cubic function with a leading coefficient of -2, with one positive zero.
2. A quartic function with a leading coefficient of 1, with two double zeros.
3. A cubic function with a leading coefficient of -3, with one positive triple root.
4. A quartic function with a leading coefficient of -2, with two negative zeros and two complex (imaginary) roots.

**Directions:** Circle the expression that has the greatest value of f(x) as x 🡪 ∞.

1. 
2. 
3. 