Honors Algebra II Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

LT 8-1: Characteristics of Polynomials Day 1 Period\_\_\_\_

**Using the characteristics that we discussed in class today, fill in the blanks.**

1) An \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ degree polynomial must have at least one real zero.

2) A polynomial function is written in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ if its terms are written in descending order of exponents from left to right.

3) The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the number in front of the term with the highest exponent in the polynomial.

4) A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a polynomial with one term, a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ has two terms, and a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ has three terms.

5) It is possible for an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ degree polynomial to have no real zeros.

6) The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is used to determine the end behavior of the graph of a polynomial function.

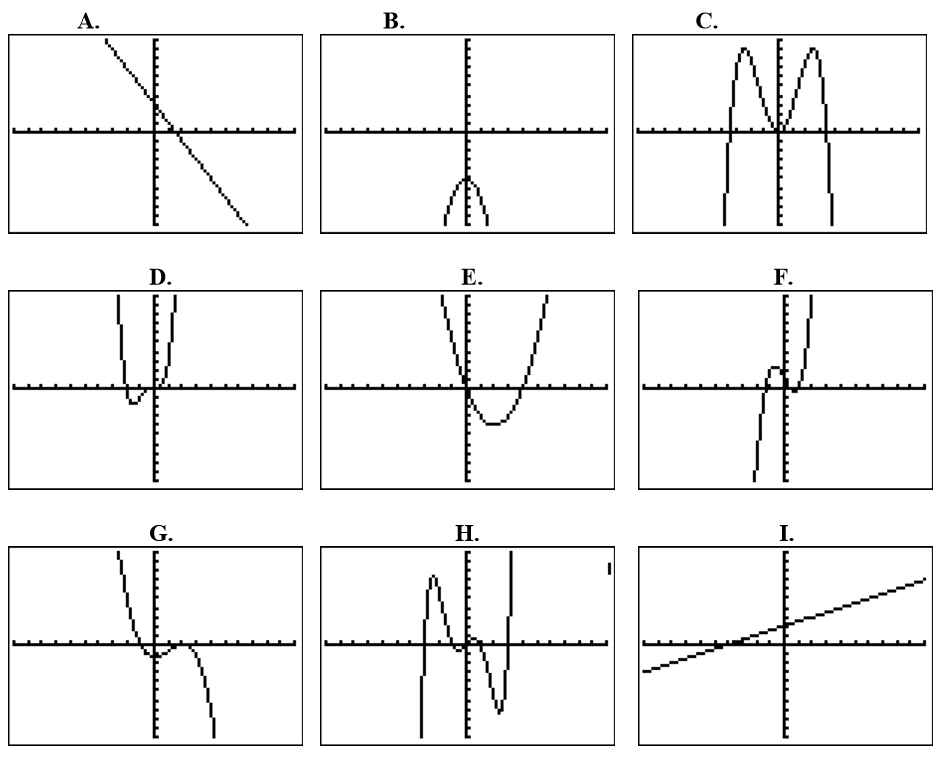
**Write each polynomial in standard form and state the degree, type, leading coefficient, and the end behavior. The first example has been done for you.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Standard Form** | **Degree** | **Classify by Degree** | **Classify by Number of Terms** | **LC** | **End Behavior** |
| *Example:* |  | 1 | Linear | Binomial |  | As  As |
| 7) |  |  |  |  |  |  |
| 8) |  |  |  |  |  |  |
| 9) |  |  |  |  |  |  |
| 10) |  |  |  |  |  |  |
| 11) |  |  |  |  |  |  |
| 12) |  |  |  |  |  |  |
| 13) |  |  |  |  |  |  |

**Describe the end behavior of the graph of the polynomial function without graphing.**

|  |  |  |
| --- | --- | --- |
| 14)  As  and as | 15)  As  and as | 16)  As  and as |
| 17)  As  and as | 18)  As  and as | 19)  As  and as |

**Match the polynomial function with its graph without using a graphing calculator.**



|  |  |  |
| --- | --- | --- |
| \_\_\_\_ 20) | \_\_\_\_ 21) | \_\_\_\_ 22) |
| \_\_\_\_ 23) | \_\_\_\_ 24) | \_\_\_\_ 25) |
| \_\_\_\_ 26) | \_\_\_\_ 27) | \_\_\_\_ 28) |