Homework 15 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Determine which of the following functions are polynomial functions.
2. Form a polynomial whose real zeros and degree are given.
   1. Zeros: -1, 1, 3; degree 3
   2. Zeros: -3,0,4; degree 3
   3. Zeros: -1, 3 (multiplicity 2); degree 3
3. For each of the following polynomials: **(i)** list each real zero and its multiplicity, **(ii)** determine whether the graph crosses or touches the x-axis at each x-intercept, **(iii)** determine the behavior of the graph near each x-intercept, **(iv)** determine the maximum number of turning points on the graph, **(v)** determine the end behavior, that is, find the power function that the graph of f resembles for large values of |x|.