

Name: _____

QUIZ 6
305G 10-1-08

1. A function of the form $\frac{p(x)}{q(x)}$ where $p(x)$ and $q(x)$ are polynomial functions and $q(x)$ is not the zero polynomial, is called a _____ function.

2. Consider the function $g(x) = x^2(x - 1)^3$
 - a. What is the degree of $g(x)$?

 - b. List the zeros and their multiplicities of $g(x)$?

 - c. Determine whether the graph of g crosses or touches the x-axis at each zero of $g(x)$.

 - d. Determine the end behavior of $g(x)$ (i.e what function does g look like for input values x such that $|x|$ is very large).

 - e. Using the degree of $g(x)$, determine the maximum number of turning points of its graph.

 - f. Determine the behavior of g (i.e what function does g look like) near each of its zeros.

 - i. What are the values of g at $x = -1, \frac{1}{2}, 2$?

h. Based on all the above information, graph $g(x)$.

