## Pre-Calc. 12 <br> 3.2 Graphing Polynomial Functions

In this section we will use the characteristics of a polynomial functions to help us sketch their graphs.

1. Determine the degree (quadratic, cubic, quartic, $5^{\text {th }}$ degree...
2. Determine the number of turning points
3. The sign (+ or -) of the leading coefficient will help us determine the end behavior (starts up or down / ends up or down)
4. Determine the zeros (x-intercepts, roots) and their multiplicity
5. Determine the $y$-intercepts (the constant term)
6. Determine the general direction at each x -intercept
7. Look at the values of " $x$ " between the x -intercepts to estimate the relative max (highs) and relative $\min$ (lows) of the graph; create a table of values
8. Plot a reasonable number of points to draw a smooth continuous curve

Ex.
On a separate sheet of paper graph $y=x^{2}(3-x)\left(x^{2}+1\right)$

