Graphing polynomial functions whose equations are in factored form Investigation

Use the TI 83+ graphing calculator to graph the following functions and record your observations in the appropriate space.

Function	Deg.	Leading coefficient	Graph	x-int.
$y = (x-1)(x+4)$				
$y = -(x-1)^3(x+4)(x-5)^2$				
$y = (x+3)^2(x-2)^2(x+1)^3(x+5)$				
$y = x^2(x-3)^2$				
$y = (x-2)^3(x+1)(x+5)^2$				
$y = (x-2)^2(x+2)^2$				

Note:
When graphing a polynomial function whose equation is in factor form:

1. Graph the x - intercepts first

2. Determine the degree of the function

3. Determine how many ~~picks~~ peaks, valleys

4. Look at the sign of the leading coefficient and determine end behaviour

5. Determine the local max, min of the function

6. Graph the function

Now you try. Graph the following polynomial functions:

$y = (x-2)(x+1)^3$
$y = (x+3)^2(x-1)$
$y = -(x+2)^2(x-1)^2$
$y = (x-2)(x+1)(x+4)^3$
$y = (x-1)^2(x-3)(x+5)^2$
$y = x(x-3)(x+2)^2(x-7)$
$y = x(x+2)^2$
$y = (x-1)^2(x-5)^3$
$y = (x-1)^2(x+1)(x+3)^2(x+5)$
$y = (x-3)^2(x+3)^2$
$y = (x+4)(x+1)^2(x-3)$
$y = (x+4)^2(x-3)$
$y = (x-3)(x-1)(x+1)^2(x+3)^2$