Characteristics From a Graph
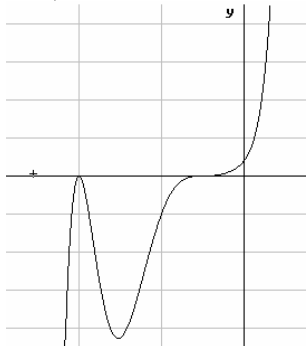
Characteristics	a $y = (2x+1)^3(3x-i)(3x+i)(x+2)^2$	b $y = (2x-3)(3x+2)(2x+1)^2(x-2i)(x+2i)$
1.Possible degree of the function	7	6
2.Value leading coefficient	72	24
3.Sign of the leading coefficient	+	+
4.Where does the graph start	3rd	2nd
5.Where does the graph finish	1st	1st
6.Value of the y-intercept	4	-24
7.The value of the constant	4	-24
8.What is (are) the x-intercepts (critical zeros)	x = -2, -1/2	x =-2/3, -1/2, 3/2
9.Multiplicity and value of positive real roots	none	x = 3/2, m = 1
10. Multiplicity and value of negative real roots	x = -2 m = 2; x = -1/2, m= 3	x = -2/3, m = 1; x = -1/2, m = 2
11.Multiplicity and value of imaginary roots	x = -i, m = 1; x = i, m= 1	x = -2i, m = 1; x = 2i, m = 1
12.Number of times the graph changes direction	2	3
13.Number of peaks	1	1
14.Number of valleys	1	2

a)   b)