What Role do Factors Play?

Now that we have established a deeper understanding of the role that dominant terms, lead coefficients and factors have on the look of a graph, we are ready to "role" :

Each of the functions are already expressed in **factored form**.
Sketch the graph of each of the following polynomial functions. Your sketch should include proper end behaviours, correct x-intercepts (remember to consider what happens with repeated roots!) and a correct y-intercept.

a) $f(x) = (x-4)(x+3)$

b) $f(x) = -(x-1)(x+4)(x-\frac{1}{2})$

c) $f(x) = (2x-1)(x+1)^2$

d) $f(x) = 2x(x-2)^2$

e) $f(x) = -(2x-3)^2(x+2)^2$

f) $f(x) = x(x-2)(x+1)(2x+3)$

g) $f(x) = x^3(x-4)$

h) $f(x) = -(x+3)^2(x-3)^3$

i) $f(x) = x(x+2)(x-1)(x-3)(x+4)$

*** solutions to the graphs are on the website

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