1.8 Graphing Polynomial Functions

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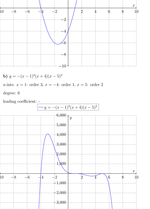
1. State the degree, leading coefficient, x-intercepts, and graph the following functions:

a) $y = (x-1)(x+4)$

x-ints: $x = 1$: order 1, $x = -4$: order 1

degree: 2

leading coefficient: 1



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

x-ints: $x = 1$: order 3, $x = -4$: order 1, $x = 5$: order 2

degree: 6

leading coefficient: -1

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

x-ints: $x = -5$: order 2, $x = 2$: order 2, $x = -1$: order 2, $x = -5$: order 1

degree: 8

leading coefficient: 1

d) $y = x^2(x-3)^2$

x-ints: $x = 0$: order 2, $x = 3$: order 2

degree: 4

leading coefficient: 1

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

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