

Given the polynomial $f(x) = (x+1)(x-3)^2(x-4)$, determine its degree, find its intercepts, and sketch the graph.

1. If you multiply the factors together, the term with the largest power is x^4 so the degree is 4.
2. Since $f(0) = (1)(-3)^2(-4) = -36$, the y-intercept is $(0, -36)$.
3. Since $f(x) = 0$ when $x = -1$ or $x = 3$ or $x = 4$, the x-intercepts are $(-1, 0)$, $(3, 0)$ and $(4, 0)$.

