Exercises

E23.32 [1SH] Prerequisites: [1SF]. Given $\theta \in \mathbb{C}$ and $k \in \mathbb{N}$, define $p(x) = (x-\theta)^k$, show that $p(D)f = 0$ if and only if $f(x) = e^{\theta x} r(x)$ with r polynomial of degree at most $k-1$.

Solution 1. *[1SJ]*