Exercises

E23.37 [1SS] Given $h = h(x)$, and $\theta \in \mathbb{R}$, solve the differential equations

$$(D - \theta)f(x) = h(x)$$

$$(D - \theta)^2 f(x) = h(x)$$

$$(D^2 + \theta^2)f(x) = h(x)$$

$$(D^2 - \theta^2)f(x) = h(x)$$

and special cases

$$(D - 1)f(x) = x^k$$

$$(D - \theta)f(x) = e^{\alpha x}$$

(with $\alpha \in \mathbb{C}$, and $k \in \mathbb{N}$, constants).

Solution 1. *[1SV]*

[[1ST]]