Hello world!

$$(p(x)y'(x))' + (\lambda r(x) - q(x))y(x) = 0 \quad x \in (a;b)$$

N	p	q	r	Equation	$\lambda \neq 0$	$\lambda = 0$
1	1	0	1	$y'' + \lambda y = 0$	$y = C_1 cos(\sqrt{\lambda}x) + C_2 sin(\sqrt{\lambda}x)$	$y = C_1 x + C_2$
2	1	0	-1	$y'' - \lambda y = 0$	$y = \widetilde{C_1} ch(\sqrt{\lambda}x) + \widetilde{C_2} sh(\sqrt{\lambda}x)$	$y = C_1 x + C_2$
3	x	0	$\frac{1}{x}$	$(xy')' + \lambda\frac{1}{x}y = 0$	$y = C_1 cos(\sqrt{\lambda}x) ln(x) + C_2 sin(\sqrt{\lambda}x) ln(x)$	$y = C_1 ln(x) + C_2$
4	x	0	$-\frac{1}{x}$	$(xy')' - \lambda\frac{1}{x}y = 0$	$y = C_1 x^{\sqrt{-\lambda}} + C_2 x^{\sqrt{\lambda}}$	$y = C_1 ln(x) + C_2$
5	x^2	0	x^2	$(x^2y')' + \lambda x^2 y = 0$	$y = C_1 \frac{cos(\sqrt{\lambda}x)}{x} + C_2 \frac{sin(\sqrt{\lambda}x)}{x}$	$y = -\frac{C_1}{x} + C_2$
6	x^2	0	$-x^2$	$(x^2y')' - \lambda x^2 y = 0$	$y = \widetilde{C_1} \frac{ch(\sqrt{\lambda}x)}{x} + \widetilde{C_2} \frac{sh(\sqrt{\lambda}x)}{x}$	$y = -\frac{C_1}{x} + C_2$
7	x	0	x	$(xy')' + \lambda xy = 0$	$y = C_1 I_0(\sqrt{\lambda}x) + C_2 Y_0(\sqrt{\lambda}x)$	$y = C_1 ln(x) + C_2$
7'	x	$\frac{\nu}{x}$	x	$(xy')' + (\lambda x - \frac{\nu}{x})y = 0$	$y = C_1 I_\nu(\sqrt{\lambda}x) + C_2 Y_\nu(\sqrt{\lambda}x)$	$y = C_1 ln(x) + C_2$
8	x	0	$-x$	$(xy')' - \lambda xy = 0$	$y = C_1 \widetilde{I_0}(\sqrt{\lambda}x) + C_2 K_0(\sqrt{\lambda}x)$	$y = C_1 ln(x) + C_2$
8'	x	$\frac{\nu}{x}$	$-x$	$(xy')' - (\lambda x + \frac{\nu}{x})y = 0$	$y = C_1 \widetilde{I_\nu}(\sqrt{\lambda}x) + C_2 K_\nu(\sqrt{\lambda}x)$	$y = C_1 ln(x) + C_2$