24. $(x-a)^2(x-b)^2 y''_{xx} - cy = 0, \qquad a \neq b.$

The transformation $\xi = \ln\left|\dfrac{x-a}{x-b}\right|$, $y = (x-b)\eta$ leads to a constant coefficient linear equation: $(a-b)^2(\eta''_{\xi\xi} - \eta'_\xi) - c\eta = 0$. Therefore, the solution is as follows:

$$y = C_1|x-a|^{(1+\lambda)/2}|x-b|^{(1-\lambda)/2} + C_2|x-a|^{(1-\lambda)/2}|x-b|^{(1+\lambda)/2},$$

where $\lambda^2 = 4c(a-b)^{-2} + 1 \neq 0$; C_1 and C_2 are arbitrary constants.

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