2e $y'' - 4y' + 3y = x$

$m^2 - 4m + 3 = 0$ $\quad m = 3$ or 1

~~$y = c_1 e^{3t} + c_2 e^{t}$~~

$y = c_1 e^{3x} + c_2 e^{x}$

$y_p = Ax + B$ $\quad 0 - 4A + 3(Ax + B) = x + 0$

$y_p' = A$

$y_p'' = 0$ $\quad 3A = 1$

$-4A + 3B = 0$

$A = 1/3$ $\quad 3B = 4/3 \Rightarrow B = 4/9$

$y = c_1 e^{3x} + c_2 e^{x} + (1/3 x + 4/9)$