

Test #3 Version B Problem 2

Find the general solution of the differential equation:

$$y'' - 18y' + 81y = 0$$

char poly: $r^2 - 18r + 81 = 0$

$$(r-9)^2 = 0 \Rightarrow r_1 = 9, r_2 = 9$$

CASE 2

$$r_1 = r_2$$

$$\hookrightarrow y_1 = e^{9x}, y_2 = xe^{9x}$$

General Sol'n: $y = c_1 e^{9x} + c_2 x e^{9x}$