

$$19 \quad y'' - 3y' + 2y = 5e^{3x}$$

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

~~$$y_c = c_1 e^x + c_2 e^{2x}$$~~

$$y_c = c_1 e^x + c_2 e^{2x}$$

$$y_p = A e^{3x} \quad 5e^{3x} = 9Ae^{3x} - 3(3Ae^{3x}) + 2Ae^{3x}$$

$$y_p' = 3Ae^{3x}$$

$$y_p'' = 9Ae^{3x}$$

$$5 = 9A - 9A + 2A$$

$$A = 5/2$$

$$y = c_1 e^x + c_2 e^{2x} + \frac{5}{2} e^{3x}$$