Engineering Mathematics **Homework 7**

1. *Solve the differential equation by variation of parameters* :

$$y''-2y'+y=\frac{e^x}{1+x^2}$$

(use **Wranski**)

2. *Find the homogeneous Cauchy – Euler differential equation* :

$$y=c_1x^{\frac{1}{2}}\cos(\frac{1}{2}\ln x)+c_2x^{\frac{1}{2}}\sin(\frac{1}{2}\ln x)$$

3. *transform the given Cauchy – Euler equation to a differential equation with constant coefficients.*

$$x=e^t,\ x^2y''+10xy'+8y=x^2$$

(use **Differential Operator**)

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