$$W(f_1, f_2, f_n) = \begin{vmatrix} f_1 & f_2 & f_n \\ f_1' & f_2' & f_n' \\ \vdots & \vdots & \vdots \\ f_1^{n-1} & f_2^{n-1} & f_n^{n-1} \end{vmatrix} \tag{1}$$

If $W(f) \neq 0$, f is linearly independent

$$y_2 = y_1(x) \int \frac{e^{-\int P(x)\,dx}}{(y_1(x))^2}\,dx \tag{2}$$

Where $y_1(x)$ is a known function
And $P(x)$ is thecoefficient of y'

$$\begin{aligned} \alpha \pm \beta i &\Rightarrow e^{\alpha x}\left(c_1\cos(\beta x) + c_2\sin(\beta x)\right) \\ \beta i &\Rightarrow c_1\cos(\beta x) + c_2\sin(\beta x) \\ \alpha, \beta &\Rightarrow c_1 e^{\alpha x} + c_2 e^{\beta x} \\ \alpha &\Rightarrow c_1 e^{\alpha x} + c_2 x e^{\alpha x} \end{aligned} \tag{3}$$

$$\begin{gathered} D^n;\ x^{n-1} \\ (D-\alpha)^n;\ x^{n-1}e^{\alpha x} \\ [D^2 - 2\alpha D + \alpha^2 + \beta^2]^n;\ x^{n-1}e^{\alpha x}\cos\beta x \end{gathered} \tag{4}$$