$\begin{array}{c} \textbf{Ordinary Differential Equations} \\ \textbf{\textit{Classification}} \end{array}$

Question

For the following differential equation, give its order, and whether it is linear or non-linear. If it is linear, state whether it is homogenous or nonhomogenous.

$$y''' + xy' = x\sin x$$

Answer

Linear, 3rd order, nonhomogeneous.