# EEE 225 - Engineering Mathematics I (Differential Equations) <br> Homework 3 

$3^{r d}$ Oct, 2022

Solve the followings,

$$
\begin{equation*}
\frac{d y}{d t}+\left(\frac{4 t}{1+t^{2}}\right) y=0, \quad y(0)=3 \tag{1}
\end{equation*}
$$

$$
\begin{equation*}
\frac{d y}{d t}+(2-\tan t) y=0, \quad y(0)=4 \tag{2}
\end{equation*}
$$

$$
\begin{equation*}
\frac{d y}{d t}+\left(\frac{3}{t}\right) y=t^{2}, \quad y(1)=2 \tag{3}
\end{equation*}
$$

$$
\begin{equation*}
\frac{d y}{d t}+\mathrm{e}^{\lambda t} y=k \mathrm{e}^{\lambda t}, \quad y(0)=y_{0} \tag{4}
\end{equation*}
$$

