

11. Show that $y_1(t) = t$ and $y_2(t) = 1/t$ are solutions of $t^2y'' + ty' - y = 0$. Determine the following solutions of this equation, or explain why none exist.
- (a) The solution $y = y(t)$ satisfying $y(1) = 0$, $y'(1) = 2$.
 - (b) All solutions satisfying $\lim_{t \rightarrow 0^+} y(t) = 0$
 - (c) All solutions satisfying $\lim_{t \rightarrow \infty} y(t) = 0$