

5. (6 Points.) The differential equation $t^2y'' - 2ty' + 2y = 0$ has the following two solutions: $y = t$ and $y = t^2$. Assuming that $t > 0$, solve the initial-value problem $t^2y'' - 2ty' + 2y = t^2$, $y(1) = 1$, $y'(1) = 0$.