2nd Order ODE Practice

Task 1: Separate the following second order differential equation into two first order differential equations

$$\frac{d^2y}{dt^2} + 5\left(\frac{dy}{dt}\right)^2 - 6y + e^{\sin(t)} = 0 \quad , \quad \frac{1}{g}\frac{d^2h}{dt^2} = \frac{T}{w} - 1 - \frac{0.008}{w}\left(\frac{dh}{dt}\right)^2$$

Task 2: Define **u** and $\frac{d\boldsymbol{u}}{dt}$ for the ODE's in Task 1 and write pseudo code to define a dudt function similar to the previous lecture assignment for each ODE.