Problem 3 c)

I need to reduce the 3rd order differential equation to a set of three coupled first-order differential equations.

$$w''' = (1 - 6w)w'$$

$$\Rightarrow w''' + 6ww' - w' = 0$$

Let $w = w_1$

$w_1' = w_2$

$w_2' = w_3$

$w_3' = (1 - 6w_1)w_2$

} Our new set of equations