Write each of the following ODEs as an equivalent first-order system of ODEs:

Van der Pol equation: $y'' = y'(1 - y^2) - y$

$$y' = u,\ u' = u(1 - y^2) - y \tag{1}$$

Blasius equation: $y''' = -yy''$

$$y' = u,\ u' = v,\ v' = -yv \tag{2}$$

Newton's Second Law of Motion for two-body problem: $y''_{1,2} = \frac{-GMy_{1,2}}{(y_1^2+y_2^2)^{3/2}}$

$$y_1' = u_1,\ u_1' = \frac{-GMy_1}{(y_1^2 + y_2^2)^{3/2}} \tag{3}$$

$$y_2' = u_2,\ u_2' = \frac{-GMy_2}{(y_1^2 + y_2^2)^{3/2}} \tag{4}$$