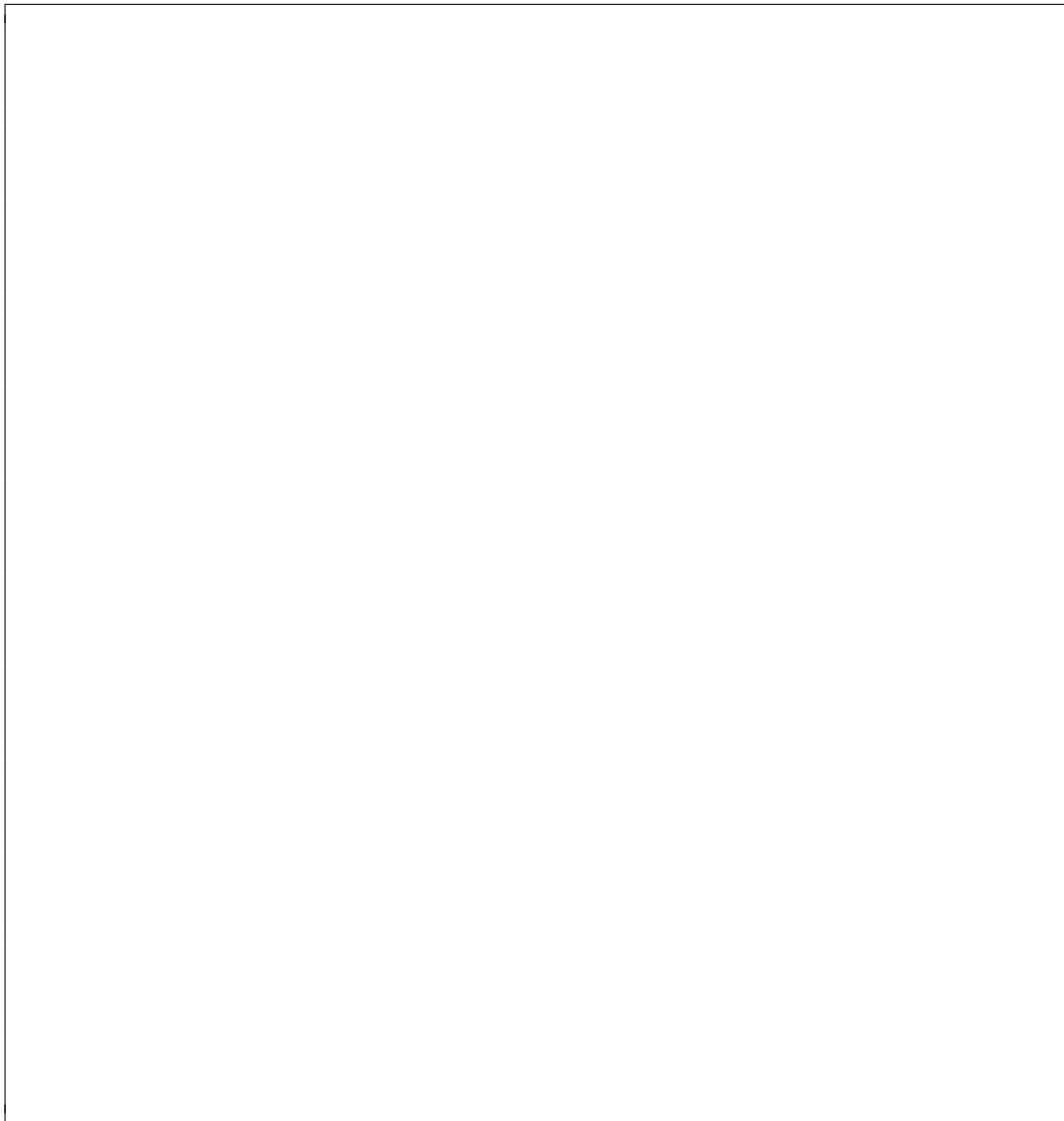
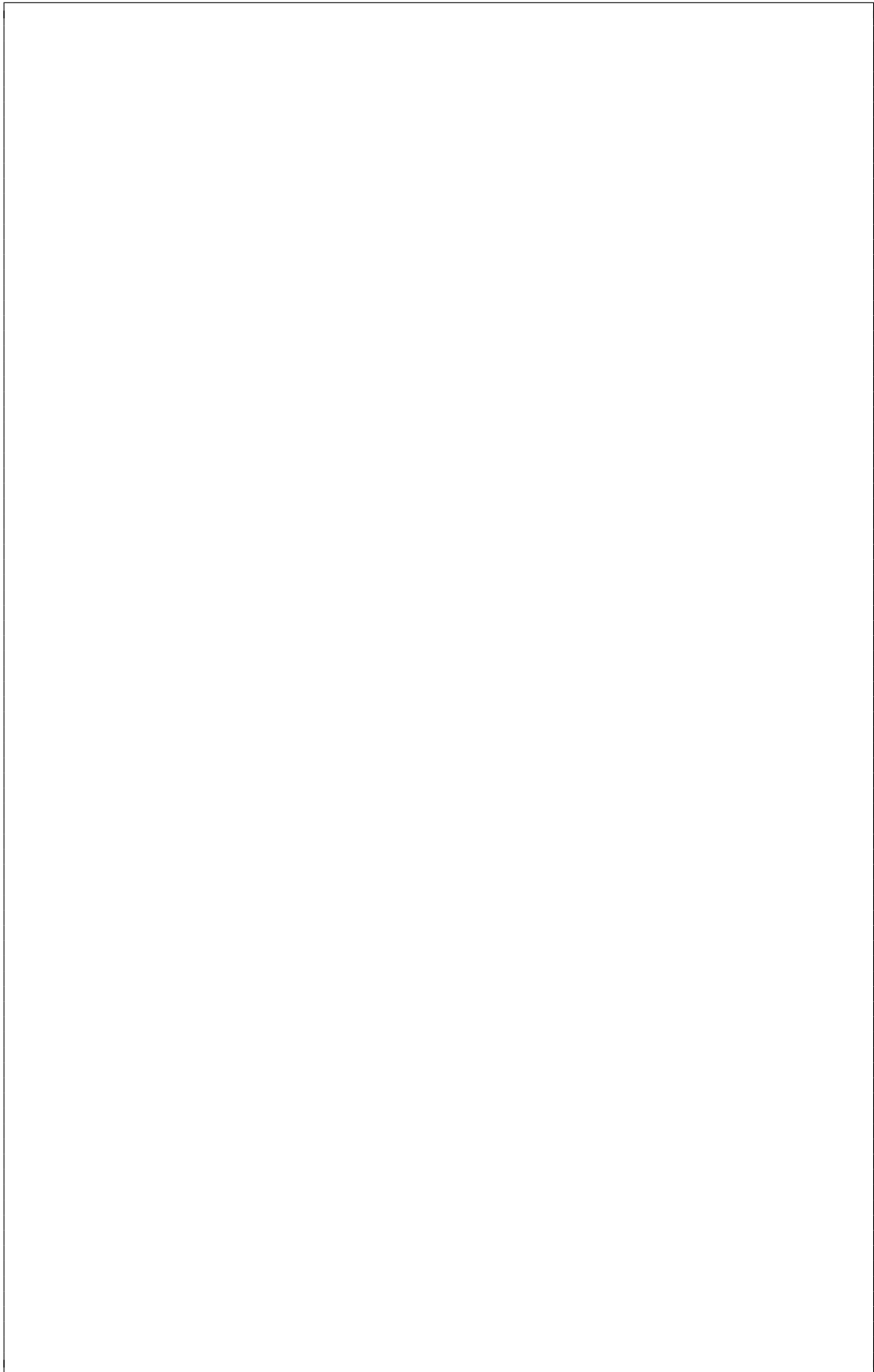


1. Linearize the equation to approximate the solutions near the equilibrium solutions. Use that to determine the stability of each solution.

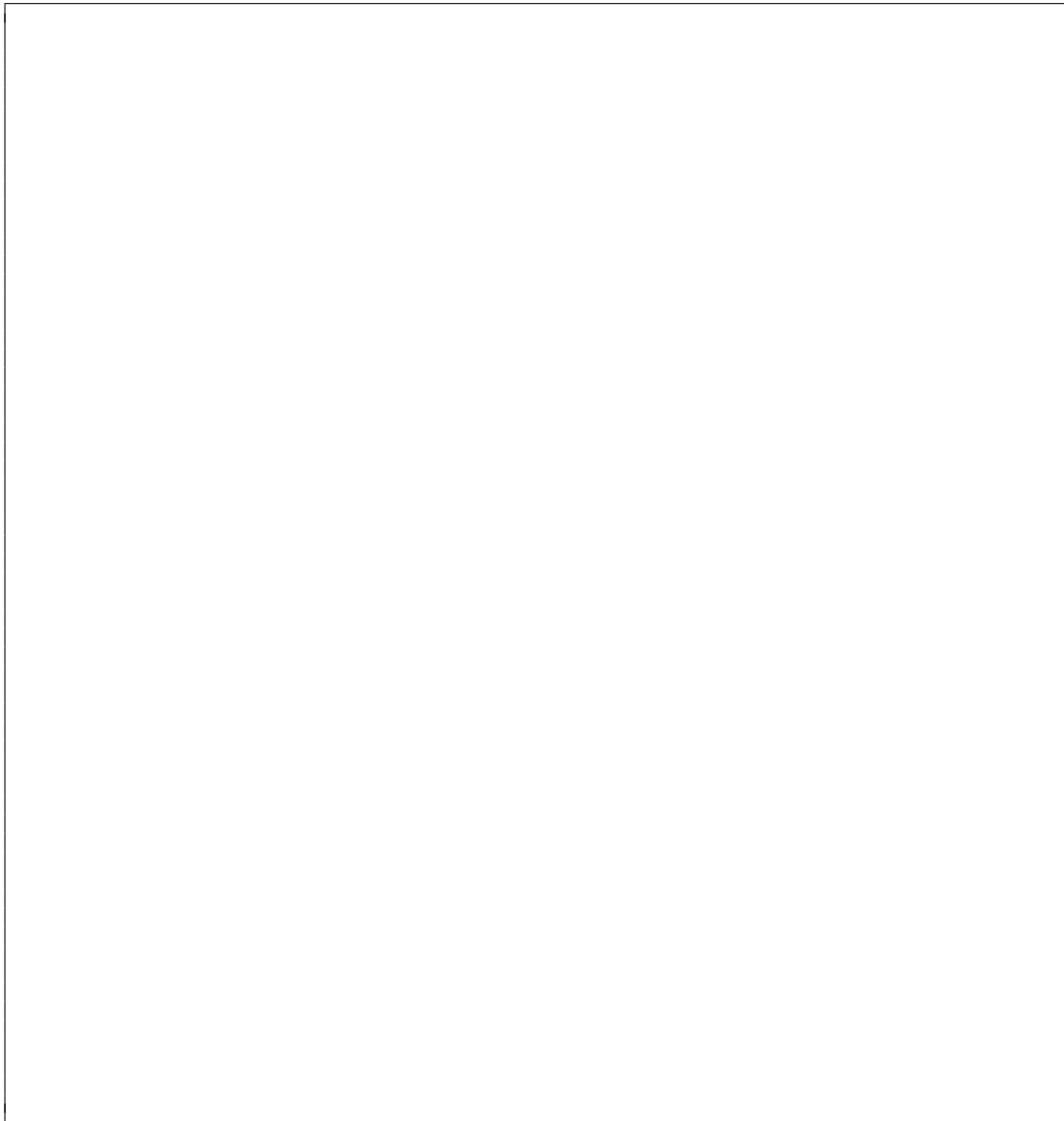
$$x' = x + x^2.$$

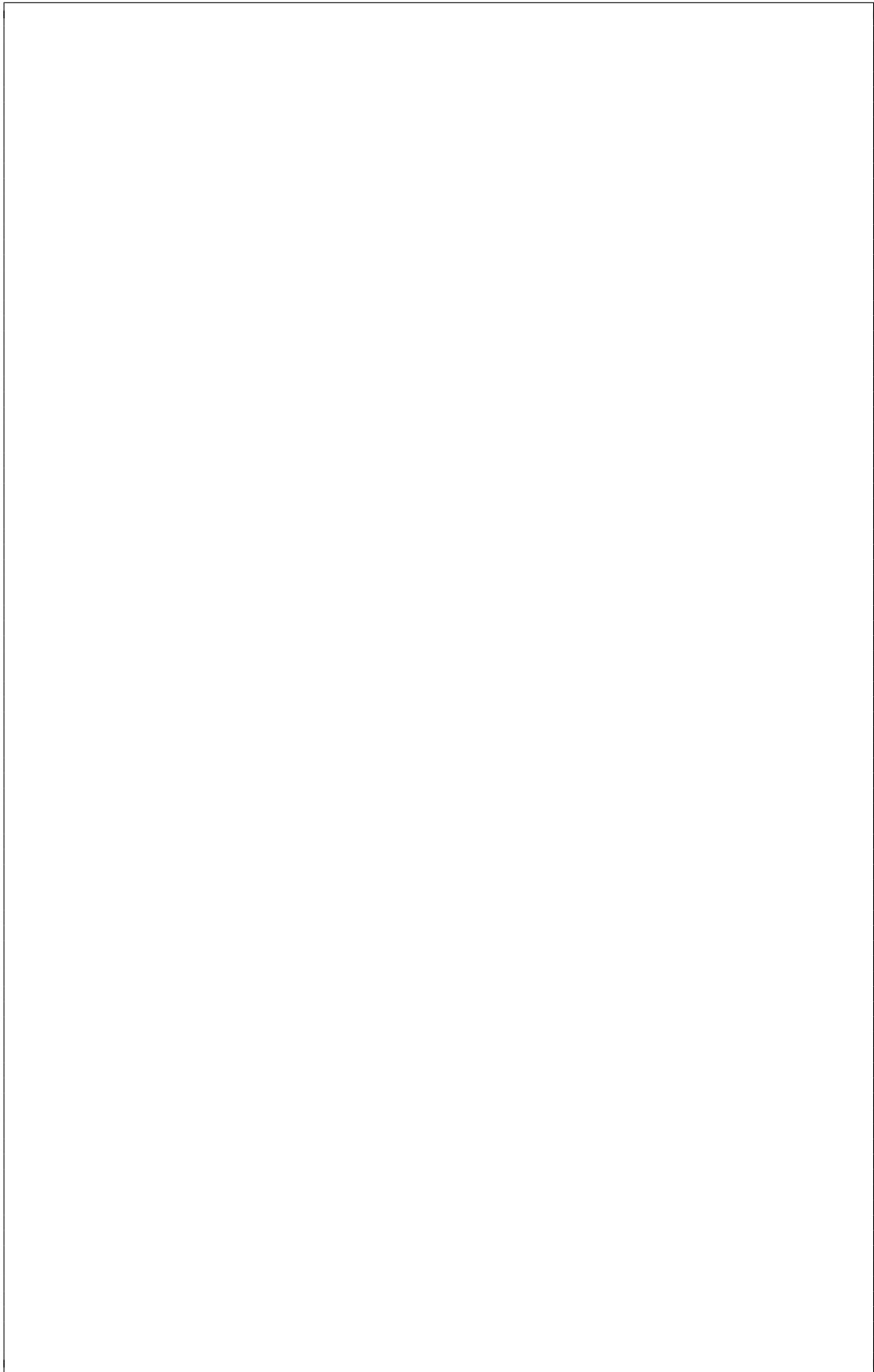




2. Linearize the equation to approximate the solutions near the equilibrium solutions. Use that to determine the stability of each solution.

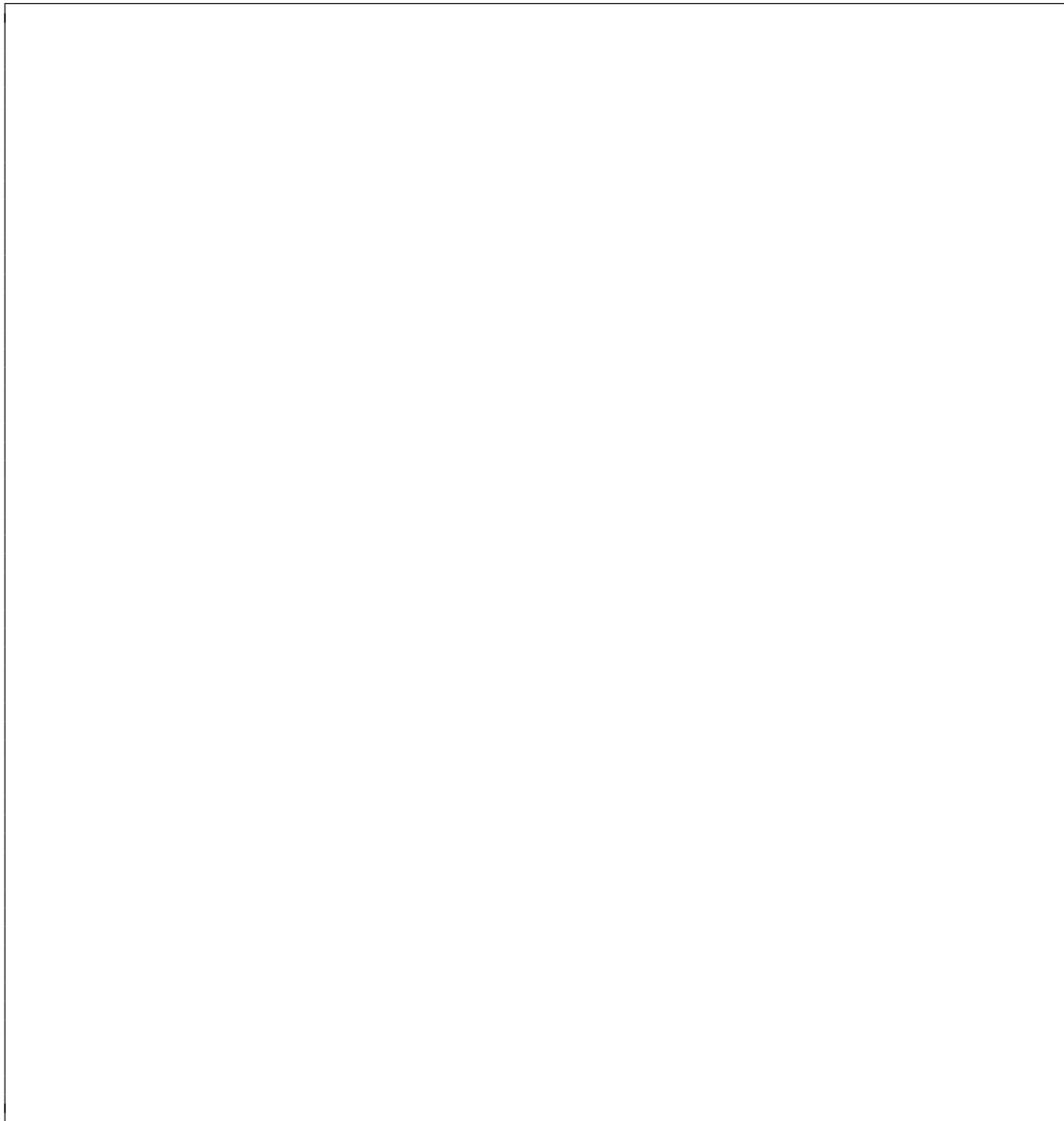
$$x' = x(x - 1)(x - 2).$$

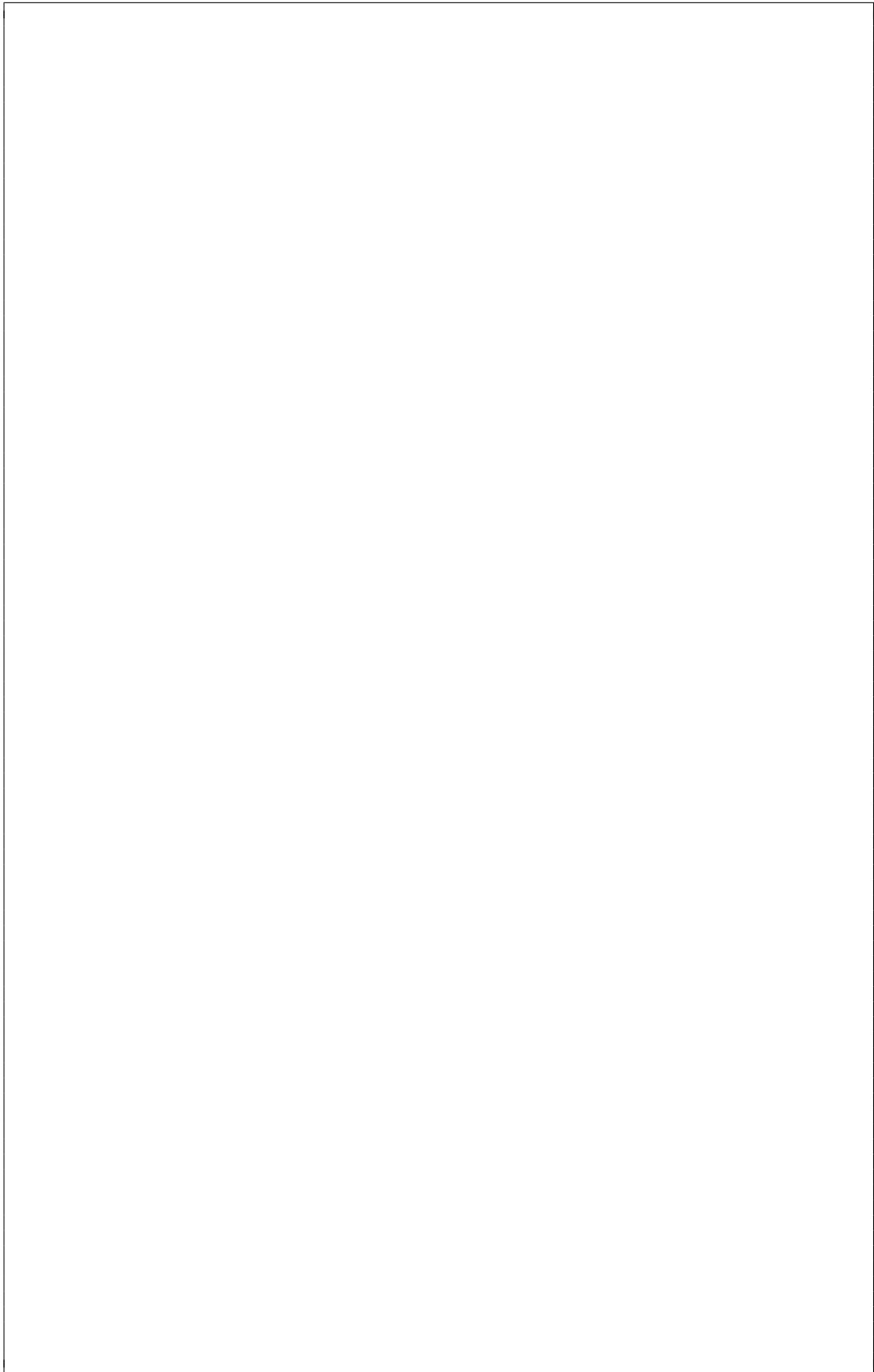




3. Linearize the equation to approximate the solutions near the equilibrium solutions. Use that to determine the stability of each solution.

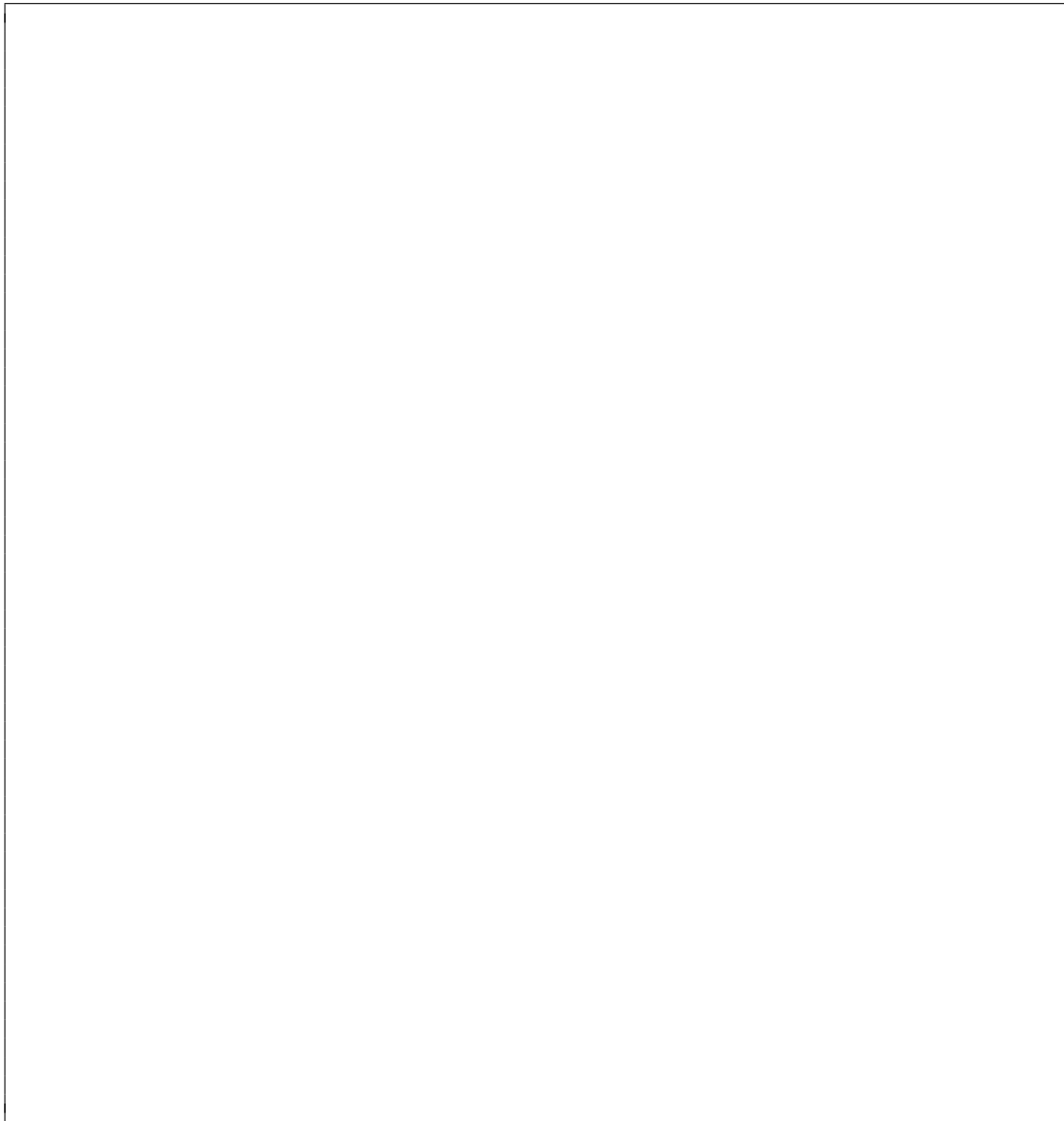
$$x' = x^2(x - 1).$$

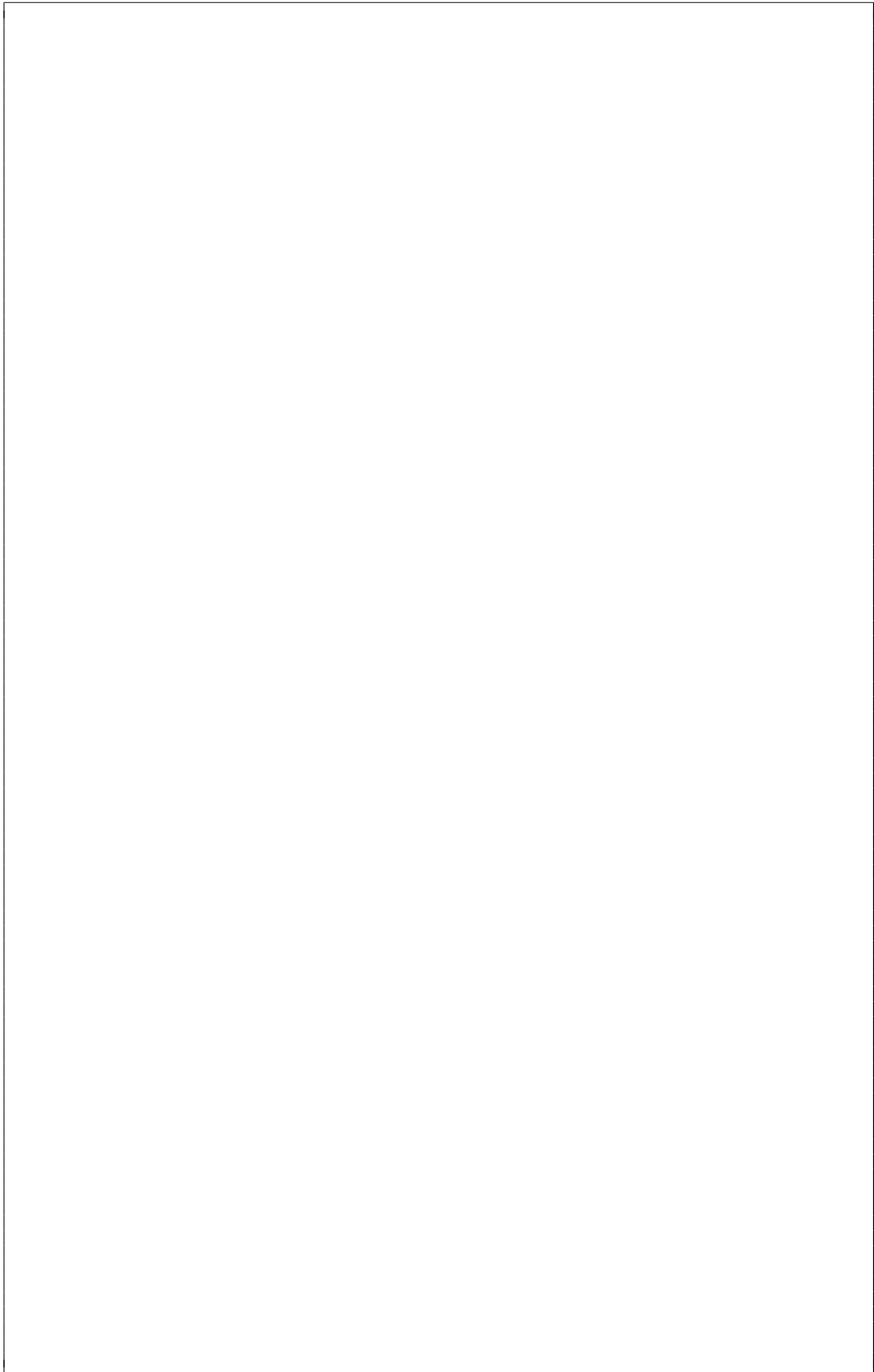




4. Linearize the equation to approximate the solutions near the equilibrium solutions. Use that to determine the stability of each solution.

$$x' = x \cos(x).$$





5. Linearize the equation to approximate the solutions near the equilibrium solutions. Use that to determine the stability of each solution.

$$\begin{pmatrix} x'(t) \\ y'(t) \end{pmatrix} = \begin{pmatrix} x(1 - x - y) \\ \frac{y}{4}(3 - 4y - 2x) \end{pmatrix}$$

