

Name:

1. Transform the following initial value problem into a system of first-order differential equations.

$$\begin{aligned}y'' - 4y &= 0 \\y(0) &= 1 \\y'(0) &= -1\end{aligned}$$

2. Solve the system of differential equations which was your answer to problem 1.

3. Which of the following describes the behavior of your answer to problem 2 at the origin?

- (a) sink
- (b) source
- (c) saddle point