

Name:

1. For each of the following statements, write the word “true” or “false.”

(a) The initial value problem $y' = \frac{2}{3}y^3$, $y(0) = 0$ has a unique solution on the interval $(-1, 1)$.

(b) The initial value problem $ty'' - 2y' + y = 0$, $y(1) = 1$, $y'(1) = 0$ has a unique solution on the interval $(0, \infty)$.

2. Solve the following initial value problem:

$$y'' - 2y' - 3y = 0$$

$$y(0) = 1$$

$$y'(0) = 0$$