

Math 240 - Quiz 4
September 21, 2023

Name _____

Score _____

Show all work to receive full credit. Supply explanations when necessary. This quiz is due September 26.

1. (2.5 points) We will soon learn a very easy way to solve the equation $y'' + y' = 0$. For now, solve by using an appropriate substitution to reduce the equation to 1st-order.

2. (2.5 points) Solve: $\frac{dy}{dx} = \frac{x^2 - y^2}{3xy}$

Turn over.

3. (2.5 points) Solve: $\frac{dx}{dt} + tx^3 + \frac{x}{t} = 0$

4. (2.5 points) Solve by using an appropriate substitution to reduce the equation to 1st-order.

$$xy'' - y' = 3x^2$$