

Problem 4

In each of Problems 1 through 6, determine the order of the given differential equation; also state whether the equation is linear or nonlinear.

$$\frac{dy}{dt} + ty^2 = 0$$

Solution

The first derivative of y is the highest derivative, so the order of the ODE is 1. The ODE is nonlinear because there is a nonlinear function of y , namely ty^2 .