

# Math 3331 ODEs - Sample Test 1

1.  $\frac{dy}{dx} = \frac{x}{y} + \frac{1}{y} + x + 1$

2.  $x \frac{dy}{dx} + 2y = x^2 y^2$

3.  $\frac{dy}{dx} - y = 2e^x, \quad y(0) = 3$

4.  $\frac{dy}{dx} = \frac{1 - 2xy^2}{1 + 2x^2y}, \quad y(1) = 1$

5.  $\frac{dy}{dx} = (\ln y - \ln x + 1) \frac{y}{x}$