

MATH 2340 WARM-UP PROBLEMS

For each of the following differential equations, determine the technique you would use to solve the ODE. Then, find the general solution.

1. $(1 + x^2)y' + 4xy - \frac{1}{1 + x^2} = 0$

2. $\frac{y}{x} + 6x + (\ln(x) - 2) \frac{dy}{dx} = 0$

3. $(y^2 - 1)y' = xy$

4. $\left(\frac{d}{dx} - 2\right)y = 0$