Differential Equations Practice Test #1 - Answers
Spring 2004

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Answers

1. ~Classify the following according to **order** and **linearity.**

    (a) ~**Order 3** and **linear**

    (b) ~**Order 1** and **non-linear**

    (c) ~**Order 2** and **linear**

    (d) ~**Order 2** and **linear**

2. $x^2 + y^2 = 5$ is the particular solution.

3. See Solutions; Our particular solution is $y = 3e^x - e^{-x} - 4x$

4. $y = e^{4x^2 + 3x - 1}$ (particular solution)

5. $y = -3x + Cx^2$

6. our particular solution is: $I = e^{-2t} + 4e^{-3t}$

7. our (particular) solution is $I = \frac{5}{6}(2t + 5) - \frac{78125}{6}(2t + 5)^{-5}$

8. $|x^2 - 2xy - y^2| = C_1$