

## Worksheet: Differential Equations

Maharashtra State Board · Class 12 · Mathematics · 3 questions · 14 marks

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Score: \_\_\_\_\_ / 14

**Q1.** Solve the differential equation:  $dy/dx = (1 + y^2) / (1 + x^2)$ , given  $y = 0$  when  $x = 0$ . [3 marks]

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**Q2.** Solve:  $x \cdot dy/dx - y = (x^2 + y^2)$ . [5 marks]

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**Q3.** Solve:  $(1 + x^2) dy/dx + 2xy = \cos x$ . Also find the particular solution when  $y = 0$  at  $x = 0$ . [6 marks]

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