

MATH 406

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Additional Exercises

Sheet4

I. Find the general solution of the following PDE and verify the solution:

1. $z_x^2 - z_y^2 = y - z z_y.$

2. $z_x z_y = 1.$

3. $z_x = z - y z_y^2.$

4. $z_x^2 z^2 = z_y^2 - 1.$

5. $z^2 = x y z_x z_y.$

6. $z_x^2 y = 1 - x^2 - x^2 z_y.$

7. $z_x = z_y = z_x z_y.$

8. $z z_x z_y = z_x - z_y.$

9. $z_x^2 z_y = x^2 - y^2 = z_x^2 - z_y.$

10. $x z_x^2 = y z_y^2 = z.$