

## IMPLICIT DIFFERENTIATION

BLAKE FARMAN

*Lafayette College*

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

Use implicit differentiation to find  $dy/dx$ .

1.  $2x^2 + xy - y^2 = 2$

2.  $x^3 - xy^2 + y^3 = 1$

3.  $\cos(xy) = 1 + \sin(y)$

4.  $xy = \sqrt{x^2 + y^2}$

5. You are given that  $f(1) = 2$  and  $f(x) + x^2f(x)^3 = 10$ . Find  $f'(1)$ .