

Supplemental Exercises for Section 3.6

Find $\frac{dy}{dx}$ by implicit differentiation.

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

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

3. $x^3 + 4xy^2 - 3y^3 = 2$

Find an equation for the line tangent to the graph of the given equation at the given point.

4. $xy + y^2 = 2$, $(1, 1)$

5. $xy^2 - 2y^3 = -4$, $(-2, 1)$

6. $x^2y - 3y^3 = -1$, $(2, -1)$

7. $y^3 + 2x^2y - y = 10$, $(-1, 2)$

8. $xy^3 + xy + 4 = 0$, $(2, -1)$

Selected Answers

1. $-\frac{2x+y}{x+6y}$

3. $-\frac{3x^2+4y^2}{8xy-9y^2}$

5. $10y - x = 12$

7. $13y - 8x - 34 = 0$