

OPMT 5701 Implicit Differentiation Homework

Be sure to review the IMPLICIT FUNCTION THEOREM NOTES

Name _____

ID: _____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

1) Find y' if $3x^2 - 7y^2 = 8$.

2) Find y' if $xy = y^2 + 1$.

3) Find y' if $\ln(xy) + y = 2$.

4) Find an equation of the tangent line to the curve $x^2 + y + y^2 = 13$ at the point $(-1, 3)$.

5) Find an equation of the tangent line to the curve $x^2 + y^2 + xy = 16$ at the point $(0, 2)$.

6) Use implicit differentiation to find $\frac{dy}{dx}$ explicitly in terms of x and y from $3x^2 + 7xy + y^2 = 19$.

7) Use implicit differentiation to find $\frac{dy}{dx}$ explicitly in terms of x and y from $xy^2 = e^x + y$.

8) Use implicit differentiation to find $\frac{dy}{dx}$ explicitly in terms of x and y from $xe^x + (\ln x)y + y^2 = 3$.