Lesson 5 Practice Problems

Implicit & Logarithmic Differentiation MATH 2200-98

Implicit Differentiation

Differentiate the the given curves.

1. $y + x\cos(y) = x^2 y$

2. $e^y \sin x = x + xy$

Differentiation of Logarithmic Functions

3. $y = \ln(x \ln(x))$

4. $y = \log_5(1 + 2x)$

5. $y = \ln(\sin^2 x)$

6. $y = e^{\cos(x)} + \cos(e^x)$

Logarithmic Differentiation

Apply properties of logarithms to differentiate the following.

7. $y = x^2 \cos x$.

8. $y = \dfrac{x^6 \sin^5(2x)}{\sqrt{2x-3}}$.

9. $y = 3^{x \ln(x)}$