

Test 2

MTH 251

1. Differentiate. (6 points @)

a. $f(x) = 5^{\cos^{-1}(\sqrt{x})}$

b. $g(x) = \log[\sec^{-1}(x)]$

c. $f(x) = \cot^{-1}(\sqrt{1 + \cosh x})$

d. $g(x) = \sinh^{-1}(3e^{4x})$

e. $f(x) = \cos^{-1}[\sinh^{-1}(4x)]$

Integrate points (a)

$$\frac{dx}{\sqrt{5-3x^2}}$$

$$\frac{3ydy}{4+y^4}$$

$$\frac{3}{|x|\sqrt{x^6}}$$

$$4 + \sin$$

$$\int e^x \sin(3x) dx$$

$$\int (\ln x)^2 dx$$

Separable Equation (8 points @)

$$\frac{dy}{dx} = \frac{2x + 6xy - 3 - 9y}{x}$$

b. $\frac{e^{3y^2}}{y(1)}$