

Exponential and Logarithmic: HW #2

1. Find the derivatives of

a) $y = 5^{\frac{-1}{x}}$

b) $y = 3^{x^4}$

2. Use logarithmic differentiation to find the derivative of

a) $y = x^{x^4}$

b) $y = x^2 e^x \sqrt{x^2 + x - 8}$

3. Discuss the curve $y = \ln(16 - x^2)$ under the following headings.

a) Domain.

b) Intercepts.

c) Symmetry.

d) Asymptotes.

e) Intervals of increase or decrease.

f) Regions of concavity.

g) Local maximum and minimum values.

h) Sketch.

