

Calculus -1

Supplementary questions for Log. and Exp. functions

Name _____

Find the derivative.

$$1) s = \frac{4e^t}{2e^t + 1}$$

$$2) y = 2x^2e^{-x}$$

Find the derivative of y with respect to x , t , or θ , as appropriate.

$$3) y = \ln 9x$$

$$4) y = \ln 4x^2$$

$$5) y = \frac{\ln x}{x^5}$$

$$6) y = \ln \frac{1-x}{(x+4)^3}$$

Use logarithmic differentiation to find the derivative of y .

$$7) y = \cos x \sqrt{5x+4}$$

$$8) y = \sqrt{\frac{x}{x+4}}$$

$$9) y = \sqrt[5]{\frac{x(x+8)}{x^4+7}}$$

$$10) y = \frac{x\sqrt{x^3+8}}{(x+8)^{2/3}}$$

Find the derivative of y with respect to x , t , or θ , as appropriate.

$$11) y = \sin e^{-\theta^5}$$

$$12) y = e^{\sin t} (\ln t^3 + 5)$$

Find $\frac{dy}{dx}$.

$$13) \ln y = e^y \cos 8x$$

$$14) e^{2x} = \sin(x+2y)$$