

**Logarithmic Functions**differentiate with respect to  $x$  :

1.  $y = \ln(x + 1)$
2.  $y = \ln(2x + 3)$
3.  $y = \ln(1 - x)$
4.  $y = \ln(5 - 3x)$
5.  $y = \ln(x^2 + 2)$
6.  $y = \ln(x^5 + 3)$
7.  $y = \ln(\cos(x))$
8.  $y = \ln(\sin(3x))$
9.  $y = \ln(e^x - 2)$
10.  $y = \ln(3 - 2e^{3x})$

## Logarithmic Functions

answers:

1.

$$\frac{1}{x+1}$$

2.

$$\frac{2}{2x+3}$$

3.

$$\frac{2}{1-x}$$

4.

$$\frac{3}{5-3x}$$

5.

$$\frac{2x}{x^2+2}$$

6.

$$\frac{5x^4}{x^5+3}$$

7.

$$\frac{\sin(x)}{\cos(x)}$$

8.

$$\frac{3\cos(3x)}{\sin(3x)}$$

9.

$$\frac{e^x}{e^x-2}$$

10.

$$-6\frac{e^{3x}}{3-2e^{3x}}$$