

## MCS22 Homework 20

Find the derivative of each function.

1.  $f(x) = \ln(\sin x)$

7.  $f(x) = \ln\left(\frac{4}{x}\right)$

2.  $f(x) = \sqrt{\ln x}$

8.  $f(x) = x^2 \ln(3x)$

3.  $f(x) = e^x \cdot \ln x$

9.  $f(x) = \cos(\ln x)$

4.  $f(x) = e^{\ln(7x)}$

10.  $f(x) = \ln(\ln x)$

5.  $f(x) = \ln e^{5x}$

11.  $f(x) = \frac{x^4}{\ln x}$

6.  $f(x) = \frac{2 \ln x}{x^2}$

12.  $f(x) = (\ln x)^7$