

## Topic 11: Logarithmic functions

Find the derivative of each function.

1.  $f(x) = \ln(2x)$

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

3.  $f(x) = \frac{\ln x}{x}$

4. Find an equation of the tangent line to  $y = x^2 \ln x$  at  $x = 1$ .

Answers

1)  $f'(x) = \frac{1}{x}$

2)  $f'(x) = \frac{3}{x}$

3)  $f'(x) = \frac{1 - \ln x}{x^2}$

4)  $y = x - 1$