1.9 Laws of logarithms

Checklist

What you should know

By the end of this subtopic you should be able to:

- rewrite exponential equations in any base in equivalent logarithmic form using $a^x = b \Leftrightarrow \log_a b = x$ for $a > 0,\ a \neq 1$ and $b > 0$
- evaluate logarithms with a calculator
- simplify algebraic expressions involving logarithms using
  - $\log_a a^m = m$
  - $\log_a 1 = 0$
  - $\log_a a = 1$
  - $a^{\log_a m} = m$
  - $e^{\ln m} = m$
- use the laws of logarithms to condense or expand logarithmic expressions.