

(1)

CHAPTER 13 PRACTISE QUESTIONS

① Express as a single logarithm

(a) $5 \log_a M - 7 \log_a N$

(b) $\frac{1}{2} \log 2 + \frac{1}{2} \log 3 - 2 \log 5$

(c) $\ln \frac{18}{5} + \ln \frac{10}{3} - \ln \frac{6}{7}$

(d) $-3 (\log 4 + \log 5)$

② Evaluate with your calculator

(a) $2^{\log_3 4}$

(d) $(\sqrt{10})^{\log_2 5}$

(b) $(\log_5 7)^{\frac{1}{3}}$

(e) $e^{-\log_9 99}$

(c) $\log_7 29$

③ Solve for x

(a) $\ln(2x-3) - \ln x = 0$

(b) $\log_2(x+1) + \log_2(x+4) = 2$

(c) $2 \log(x-3) - \log(x-1) = 0$

(d) $\log_5(x^2-6) = \log_5 x$

(e) $\log_5(x+1) - \log_5 x = 1$

$$f) 3^x = 20$$

$$g) 7^x = 101$$

$$h) 10^x = e$$

$$i) (1.5)^{x/2} = 152$$

$$j) 3^x = 5^{x-1}$$

$$k) 3(5^{x+1}) = 7^{1-x}$$

$$l) e^{2x} = 8^{x-1}$$

4) Express each number
in scientific notation

$$a) \frac{30^{99} \cdot 56}{12^7}$$

$$b) (2)^{720}$$