

Exercise A

- 1 a** $\log_4 256 = 4$ **b** $\log_3 \left(\frac{1}{9}\right) = -2$
c $\log_{10} 1\,000\,000 = 6$ **d** $\log_{11} 11 = 1$
e $\log_{0.2} 0.008 = 3$
- 2 a** $2^4 = 16$ **b** $5^2 = 25$
c $9^{\frac{1}{2}} = 3$ **d** $5^{-1} = 0.2$
e $10^5 = 100\,000$
- 3 a** 3 **b** 2 **c** 7 **d** 1 **e** 6
f $\frac{1}{2}$ **g** -1 **h** -2 **i** 10 **j** -2
- 4 a** 625 **b** 9 **c** 7 **d** 2

Exercise B

- 1** 1.30 **2** 0.602 **3** 3.85 **4** -0.105
5 1.04 **6** 1.55 **7** -0.523 **8** 3.00

Exercise C

- 1 a** $\log_2 21$ **b** $\log_2 9$ **c** $\log_5 80$
d $\log_6 \left(\frac{6^4}{81}\right)$ **e** $\log_{10} 120$
- 2 a** $\log_2 8 = 3$ **b** $\log_6 36 = 2$ **c** $\log_{12} 144 = 2$
d $\log_8 2 = \frac{1}{3}$ **e** $\log_{10} 10 = 1$
- 3 a** $3 \log_a x + 4 \log_a y + \log_a z$
b $5 \log_a x - 2 \log_a y$
c $2 + 2 \log_a x$
d $\log_a x + \frac{1}{2} \log_a y - \log_a z$
e $\frac{1}{2} + \frac{1}{2} \log_a x$

Exercise D

- 1 a** 6.23 **b** 2.10 **c** 0.431 **d** 1.66
e -3.22 **f** 1.31 **g** -3.24 **h** -0.0617
i 1.42 **j** -0.542
- 2 a** 0, 2.32 **b** 1.26, 2.18 **c** 1.21
d 0.631 **e** 0.565, 0.712

Exercise E

Will be updated soon.
