

## Chapter 0 Revision Indices and Logarithms

1. Simplify  $(x^5)^4(-2x\sqrt{y})^2$  Ans:  $4x^{22}y$
2. Simplify  $\frac{4^x \cdot 8^{x+2}}{2^{x+6} \cdot 4^{2x}}$  Ans: 1
3. If  $2x^{\frac{1}{3}} = 4^{\frac{1}{3}}$ , find  $x$  Ans:  $x = \frac{1}{2}$
4. Solve  $5 - 6^{x+4} = 4$  Ans:  $x = -4$
5. Solve  $4x^{\frac{1}{3}} = 64^{\frac{2}{3}}$  Ans:  $x = \frac{1}{64}$
6. Without using calculator, evaluate  $2 \log \frac{3}{2} + \log \frac{8}{9} - \log 2$  Ans: 0
7. Without using calculator, evaluate  $\log 3^6 + \log \left(\frac{1}{9}\right)^3$  Ans: 0
8. Simplify  $\frac{2 \log x - \log \frac{1}{x}}{\log x^3 + 4 \log x}$  Ans:  $\frac{3}{7}$
9. Solve  $\log(5x-4) - \log(2x-1) = 1 + \log \frac{1}{5}$  Ans:  $x = 2$
10. Solve  $5^{2x-1} = 7^{3x+1}$ , giving the answers correct to 2 decimal places Ans:  $x = -1.36$