1 (a) Simplify $x^8 \times x^3$ (1)

(b) Simplify $(5y)^3$ (1)

(c) Simplify $\dfrac{w^7}{w^4}$ (1)

(3 marks)

2 (a) Simplify $a^9 \times a^4$ (1)

(b) Simplify $(4b^2c)^3$ (1)

(c) Simplify $d^9 \div d^4$ (1)

(3 marks)

3 (a) Simplify $2m^2 \times 5n^6$ (1)

(b) Simplify $15p^3 \div 3p^4$ (2)

(3 marks)

4 (a) Simplify $(t^3)^4$ (1)

(b) Simplify $12m^2n^6 \div 3mn^4$ (2)

(3 marks)

5 Simplify $5m^2n^3 \times 3mn^4$ (2)

(2 marks)

6 (a) Write down the value of 5^{-3} (1)

(b) Write down the value of 5^0 (1)

(2 marks)

7 Work out the value of $5^2 \times 2^3$

(1 mark)

8 Write down the value of 2^{-3}

(1 mark)

9 $y^2 \times y^a = y^7$

(a) Find the value of a. (1)

$(y^4)^b = y^{12}$

(b) Find the value of b. (1)

(2 marks)

10 (a) Given $\dfrac{x^6}{x^a} = x^8$ (1)

Find the value of a.

(b) Simplify $(2m^2)^4$ (2)

(3 marks)

11 (a) Write $\dfrac{3^4 \times 3^5}{3^2}$ as a power of 3 (2)

(b) Write down the value of 3^{-3} (1)

(c) Write down the value of 3^0 (1)

(4 marks)

Grade 4	Indices	Grade 4

12 Work out the value of $\dfrac{2^9 \times 2^{-2}}{2^4}$

(2 marks)

13 Work out the value of $(2^2)^3$

(1 marks)

14 (a) Simplify $p^3 \times p^5$ (1)

(b) Simplify $(4ab^2)^3$ (2)

(c) Simplify $\dfrac{16m^7n^3}{4m^3n}$ (2)

(5 marks)

15 $1000^4 = 10^x$

Find the value of x.

(1 mark)

16 Work out the value of $\dfrac{2^3 \times 2}{2^5}$

(2 marks)

17 Write down the reciprocal of 8

(1 mark)

18 (a) Simplify $9p^3 \times 2p^{-2}$ (1)

(b) Simplify $(5x^3y^2)^3$ (2)

(c) $p^3 \times p^5 = p^{12} \times p^y$

Find the value of y (2)

(5 marks)

19 $10^x = 1$

Write down the value of x.

(1 mark)

20 Write $5^4 \times 5$ as a power of 5

(1 mark)

21 Write down the reciprocal of 2

(1 mark)

22 (a) Simplify $5c^2d^3 \times 2d$ (1)

(b) Write 64×4^5 as a power of 4 (2)

(c) Simplify $p^3 \times (p^5)^2$ (2)

(5 marks)

23 $p^9 \times p^5 = p^x$

Write down the value of x

(1 mark)

24 Write down the reciprocal of $\dfrac{1}{3}$

(1 mark)

25 Simplify $\dfrac{10p^3q^5r}{4p^3q^6}$

(2 marks)

| Grade 4 | Indices | Grade 4 |