

# Indices

## Question Paper

Level	GCSE
Subject	Maths
Exam Board	Edexcel GCSE
Topic	Indices
Grade Level	Grade 4
Booklet	Question Paper

**Time Allowed:** 88 minutes

**Score:** /73

**Percentage:** /100

**Grade Boundaries:**

1. (a) Simplify  $m^3 \times m^6$  ..... (1)

(b) Simplify  $\frac{p^8}{p^2}$  ..... (1)

(c) Simplify  $(2n^3)^4$  ..... (2)

**(4 marks)**

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2. (a) Simplify  $m^6 \times m^7$  ..... (1)

(b) Simplify  $x^0$  ..... (1)

(c) Simplify  $(16y^6)^{\frac{1}{2}}$  ..... (2)

**(4 marks)**

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3. (a) Simplify  $m^5 \div m^3$  ..... (1)

(b) Simplify  $5x^4y^3 \times x^2y$  ..... (2)

**(3 marks)**

4. (a) Simplify  $a^4 \times a^5$  ..... (1)

(b) Simplify  $\frac{45e^6 f^8}{5ef^2}$  ..... (2)

(c) Write down the value of  $9^{\frac{1}{2}}$  ..... (1)

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(4 marks)

5. (a) Simplify  $m^2 \times m^4$  ..... (1)

(b) Simplify  $y^7 \div y^5$  ..... (1)

(c) Simplify  $(m^3)^5$  ..... (2)

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(4 marks)

6. Simplify fully

(a)  $p^2 \times p^7$  ..... (1)

(b)  $\frac{3q^4 \times 2q^5}{q^3}$  ..... (2)

(c)  $(2xy^3)^5$  ..... (2)

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(4 marks)

7. (a) Simplify  $15y^6 \div 3y^2$

.....  
(2)

(b) Simplify  $7wx^2 \times 3w^3x$

.....  
(2)

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**(4 marks)**

8. Work out the value of

(a)  $(2^2)^3$

.....  
(1)

(b)  $(\sqrt{3})^2$

.....  
(1)

(c)  $\sqrt{2^4 \times 9}$

.....  
(2)

(d)  $4^{-2}$

.....  
(1)

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**(5 marks)**

9. (a) Write down the value of  $49^{\frac{1}{2}}$

.....  
(1)

(b) Simplify

(i)  $\frac{x^6}{x^2}$

.....

(ii)  $(y^4)^3$

.....

(2)

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**(3 marks)**

10. Simplify  $\frac{15a^3 b^7}{3a^2 b^3}$

.....  
**(2 marks)**

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11.  $7^5 \times 7^6 = 7^3 \times 7^k$

Find the value of  $k$ .

$k = \dots\dots\dots$

**(2 marks)**

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12. (a) Simplify  $p^3 \times p^2$

.....  
**(1)**

(b) Simplify  $\frac{q^3 \times q^4 \times q}{q^2}$

.....  
**(2)**

**(3 marks)**

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13. Find the value of

(i)  $36^{\frac{1}{2}}$

(ii)  $3^{-2}$

.....  
.....  
**(2 marks)**

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14. (a) Write as a power of 7

(i)  $7^8 \div 7^3$

.....

(ii)  $\frac{7^2 \times 7^3}{7}$

.....

(3)

(b) Write down the reciprocal of 2

.....

(1)

**(4 marks)**

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15. (a) Simplify

$$12y^3 \div 3y^5$$

.....

(2)

(b) Simplify

$$2w^3x^2 \times 3w^4x$$

.....

(2)

**(4 marks)**

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16. (a) Work out the value of

(i)  $4^2$

.....

(ii)  $\sqrt{64}$

.....

(iii)  $3 \times 2^3$

.....

**(3 marks)**

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17. Simplify

(i)  $x^4 \times x^5$

.....

(ii)  $\frac{p^8}{p^3}$

.....

(iii)  $3s^2t^3 \times 4s^4t^2$

.....

(iv)  $(q^3)^4$

.....

**(6 marks)**

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18. Simplify fully

(i)  $(p^3)^3$

.....

(ii)  $\frac{3q^4 \times 2q^5}{q^3}$

.....

**(4 marks)**

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19. Work out

(i)  $4^0$

.....

(ii)  $4^{-2}$

.....

(iii)  $16^{\frac{3}{2}}$

.....

**(4 marks)**

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20. (a) Find the value of

(i)  $64^\circ$

.....

(ii)  $64^{\frac{1}{2}}$

.....

(iii)  $64^{-\frac{2}{3}}$

.....

**(4 marks)**

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