

Laws of Indices

For AQA GCSE Mathematics (8300) • Foundation tier

Name _____

Total marks: **23**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method.

1 Write $3 \times 3 \times 3 \times 3 \times 3$ as a power of 3

[1 mark]

Answer _____

2 Write each answer as a single power.

(a) $5^3 \times 5^4$

[1 mark]

Answer _____

(b) $7^9 \div 7^2$

[1 mark]

Answer _____

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

[1 mark]

Answer _____

(d) $4^6 \times 4$

[1 mark]

Answer _____

3 Write $25^2 \times 5^3$ as a power of 5

[2 marks]

Answer _____

4 Write $10^3 \times 1000$ as a power of 10

[1 mark]

Answer _____

5 Work out $(2^3 \times 2^2) \div 2^4$

[1 mark]

Answer _____

6 Circle the value of 6^0

[1 mark]

0

1

6

$\frac{1}{6}$

7 Write $3^{10} \div 9$ as a single power of 3

[2 marks]

Answer _____

8 $2^4 \times 2^n = 2^{11}$

Work out the value of n .

[1 mark]

$n =$ _____

9 $\frac{5^8}{5^3} = 5^{n-1}$

Work out the value of n .

[2 marks]

$n =$ _____

10 Tick **one** box for each statement.

[2 marks]

$4^3 \times 4^2 = 4^5$

$2^3 \times 3^2 = 6^5$

$9^6 \div 9^3 = 9^2$

$(2^4)^2 = 2^8$

True

False

☐☐☐☐☐☐☐☐

11 Work out the value of $\frac{3^7}{3^4 \times 3^2}$

[2 marks]

Answer _____

12 Work out the value of $2^{10} \div (2^3)^2$

[2 marks]

Answer _____

13 $a = 2^5$ $b = 2^3$
Write ab^2 as a power of 2

[2 marks]

Answer _____