Name:

Exam Style Questions

Laws of Indices



Equipment needed: Pen, Calculator

Guidance

- 1. Read each question carefully before you begin answering it.
- 2. Check your answers seem right.
- 3. Always show your workings

Video Tutorial

www.corbettmaths.com/contents

Videos 17, 174



Answers and Video Solutions



$$2^2 \times 2^3 = 2$$

Write the missing power in the box.

(1)

Simplify $5^4 \times 5^3$ 2.



Circle the correct answer.

 25^7 5^{12}

5⁷

 25^{12}

(1)

Simplify $n^2 \times n^4$ 3.



(1)

 $4. p^6 \times p^2 = p^x$



Find the value of x

(1)

Jonah was asked to simplify $y^8 \times y^3$ 5.



His answer is y^{24}

Explain Jonah's mistake.

6.	(a) Simplify	$w^4 \times w^4$	
	(b) Simplify	$a^6 \div a^3$	(1
7.	(a) Simplify	$m^5 \times m^3$	(1
	(b) Simplify	$m^8 \div m^2$	(1
	(c) Simplify	$(m^3)^2$	(1

(1)

8. Simplify
$$\frac{c^{12}}{c^4}$$

(1)

9. Simplify



$$\frac{m^9 \times m}{m^5}$$

(2)

10. Match the expressions.



$$c^{10} \div c^{5}$$

$$c^7 \times c^3$$

$$(c^8)^2$$

$$c^{7} \times c^{3}$$

$$(c^{8})^{2}$$

$$\frac{c^{6}}{c^{4}}$$

11. Simplify the following.



$$\frac{s^3 \times s^4}{s^2}$$

(2)

12.



(a) Simplify $w^3 \times w^{-5}$

(1)

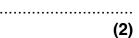
(b) Simplify $a^4 \div a^{-2}$

(1)

13. Simplify $c^7 \times (c^6)^4$



Work out the value of $\frac{2^9 \times 2^{-2}}{2^3}$



Simplify $\left(5^{-3} \times 5^7\right)^3$ 15.



Give your answer as a power of 5.



Simplify $2a^3c^3 \times 3a^2c$ 16.



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17. Simplify

$$\frac{10m^5n^4}{2m^2n}$$

(2)

Simplify $(7x^3)^2$ 18.



Circle the correct answer.

$$49x^5$$
 $14x^6$ $14x^5$

$$14x^{6}$$

$$14x^5$$

$$49x^{6}$$

(1)

Simplify $(2m^4)^3$ 19.



(2)

Simplify $(2xy^3)^4$ 20.



(2)

21. Work out the value of $3^{16} \div (3^2)^7$



(2)

22. Simplify



$$\frac{a^{\frac{1}{5}} \times a^{\frac{2}{3}}}{a^{\frac{3}{5}}}$$

(3)

23. Simplify fully



$$\sqrt{\frac{50\pi a^5}{2\pi a^3}}$$

(3)

24. Work out



$$\sqrt[3]{\frac{2^3\times3^8}{3^2}}$$

25. Simplify	$25 \times 5^3 \times 5^6$
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Give your answer as a power of 5.

(2)

26. Write 27×9^x as a power of 3 in terms of x

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(3)