

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](http://www.corbettmaths.com/contents)

Videos 17, 174



Answers and Video Solutions



1.   $2^2 \times 2^3 = 2^{\square}$

Write the missing power in the box.

(1)

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



Circle the correct answer.

$25^7$

$5^{12}$

$5^7$

$25^{12}$

(1)

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



.....  
(1)

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



Find the value of x

.....  
(1)

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



His answer is  $y^{24}$

Explain Jonah's mistake.

.....  
.....

(1)

6.



(a) Simplify

$$w^4 \times w^4$$

.....  
(1)

(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)

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



.....  
(1)

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



.....  
(2)

10. Match the expressions.



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

$$c^{16}$$

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

$$c^5$$

$$(c^8)^2$$

$$c^2$$

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

$$c^{10}$$

(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)

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



.....  
(2)

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



.....  
(2)

---

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



Give your answer as a power of 5.

.....  
(2)

---

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



.....  
(2)

17. Simplify



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

.....  
(2)

---

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



Circle the correct answer.

$49x^5$

$14x^6$

$14x^5$

$49x^6$

.....  
(1)

---

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



.....  
(2)

---

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



.....  
(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



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

.....  
(2)

25. Simplify  $25 \times 5^3 \times 5^6$



Give your answer as a power of 5.

.....  
(2)

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26. Write  $27 \times 9^x$  as a power of 3 in terms of x



.....  
(3)