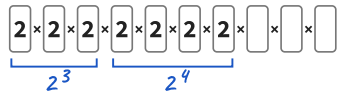


Index Laws: Multiplying and Dividing

ANSWERS

1

Write $2^3 \times 2^4$ as a single power of 2.

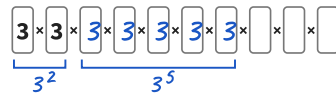


Count the 2s.

$$2^3 \times 2^4 = 2^{\boxed{7}}$$

2

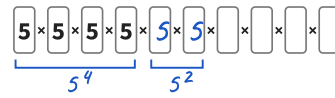
Write $3^2 \times 3^5$ as a single power of 3.



$$3^2 \times 3^5 = 3^{\boxed{7}}$$

3

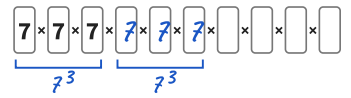
Write $5^4 \times 5^2$ as a single power of 5.



$$5^4 \times 5^2 = 5^{\boxed{6}}$$

4

Write $7^3 \times 7^3$ as a single power of 7.

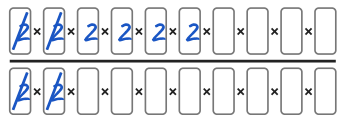


$$7^3 \times 7^3 = 7^{\boxed{6}}$$

5

Notice the change!

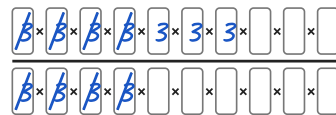
Write $2^5 \div 2^2$ as a single power of 2.



$$2^5 \div 2^2 = 2^{\boxed{4}}$$

6

Write $3^7 \div 3^4$ as a single power of 3.



$$3^7 \div 3^4 = 3^{\boxed{3}}$$

7

Find the missing power.

$$2^5 \times 2^{\boxed{7}} = 2^{12}$$

$$\underline{5 + 7 = 12}$$

 Answer $\boxed{7}$

8

Write 4×2^3 as a single power of 2.

$$\underline{4 = 2^2}$$

 Answer $\boxed{2^5}$

Index Laws: Multiplying and Dividing further practice

ANSWERS

9

Write as a single power of 5.

$$5^9 \div 5^4 \times 5^2$$

$$\underline{9 - 4 + 2}$$

Answer $\boxed{5^7}$

10

Simplify

$$y^4 \times y^5$$

$$\underline{4 + 5}$$

Answer $\boxed{y^9}$

11

A school orders 10^3 boxes of pencils.

There are 10^2 pencils in each box.

How many pencils is that?

Give your answer as a power of 10 and as an ordinary number.

$$\underline{3 + 2 = 5}$$

Answer $\boxed{10^5 = 100\,000}$

12

Which is bigger? Show how you know.

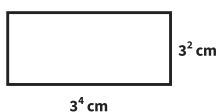
$$2^4 \times 2^5 \text{ or } 2^{12} \div 2^2$$

$$\underline{2^9 \text{ and } 2^{10}}$$

Answer $\boxed{2^{12} \div 2^2}$

13

Find the area of this rectangle.
Give your answer as a power of 3.



$$\underline{3^4 \times 3^2}$$

Answer $\boxed{3^6 \text{ cm}^2}$

14

A warehouse has 5^6 tins of beans.
They are packed in boxes of 5^2 tins.
How many boxes are needed?
Give your answer as a power of 5 and as an ordinary number.

$$\underline{6 - 2 = 4}$$

Answer $\boxed{5^4 = 625}$

15

Find the value of n .

$$9 \times 3^n = 3^{10}$$

$$\underline{9 = 3^2, \text{ so } 2 + n = 10}$$

Answer $\boxed{n = 8}$

16

Leo says $2^3 \times 2^4 = 4^7$ because
 $2 \times 2 = 4$ and $3 + 4 = 7$.
Is Leo right? Explain.

$$\underline{2^7 = 128, \text{ but } 4^7 = 16\,384}$$

Answer $\boxed{\text{No, it is } 2^7}$