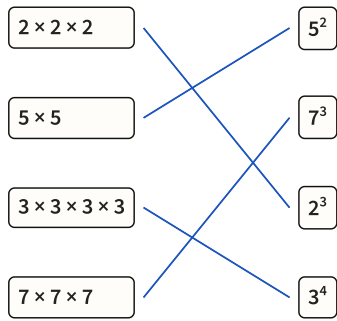


Using Index Notation

ANSWERS 

1
Draw lines to match each multiplication to its index form.



2
Write in index form.

$6 \times 6 \times 6 = 6^3$
 $9 \times 9 = 9^2$
 $4 \times 4 \times 4 \times 4 \times 4 = 4^5$

3
Write as a multiplication.

$2^4 = 2 \times 2 \times 2 \times 2$
 $8^2 = 8 \times 8$
 $3^3 = 3 \times 3 \times 3$

4
Work out

$2^3 = 8$ $5^2 = 25$
 $10^2 = 100$ $3^3 = 27$

5
Fill in the missing power.

$2^4 = 16$
 $3^2 = 9$
 $10^3 = 1000$

6
Circle the bigger one, or circle same if they are equal.

2^5 5^2 same
 3^2 2^3 same
 4^2 2^4 same

7
Jo says $4^3 = 12$. Explain Jo's mistake.

Jo did 4×3 . It should be
 $4 \times 4 \times 4 = 64$.

8
Write these in order, smallest first.

3^2 2^5 4^2 1^6
 1^6 3^2 4^2 2^5

Using Index Notation *further practice*

ANSWERS 

9
Write $7 \times 7 \times 7 \times 7 \times 7$ in index form.
Then use a calculator to work out its value.

Index form 7^5
 Value $16\,807$

10
Work out

$5^2 - 2^3$
 $25 - 8$
 Answer 17

11
A square garden is 12 m long and 12 m wide. Write its area in index form and work out the area.

Index form 12^2 m^2
 Area 144 m^2

12
A big cube is built from 125 small cubes. How many small cubes are along each edge?

$5^3 = 5 \times 5 \times 5 = 125$
 Answer 5

13
Find the missing power.
 $10^{\square} = 1\,000\,000$

count the zeros
 Answer 6

14
Ana saves 2^{10} pence.
Ben saves 10^3 pence.
Who saves more, and by how much?

1024p and 1000p
 Answer Ana, by 24p

15
In a knockout competition, half of the teams are knocked out in each round. After 5 rounds there is one team left. How many teams were there at the start? Write your answer as a power of 2.

$1, 2, 4, 8, 16, 32$
 Answer $2^5 = 32$

16
Ivy says that 3^4 is three times as big as 3^3 . Is Ivy right? Explain.

$3^4 = 81$ and $3^3 = 27$, $27 \times 3 = 81$
 Answer Yes, $81 = 3 \times 27$