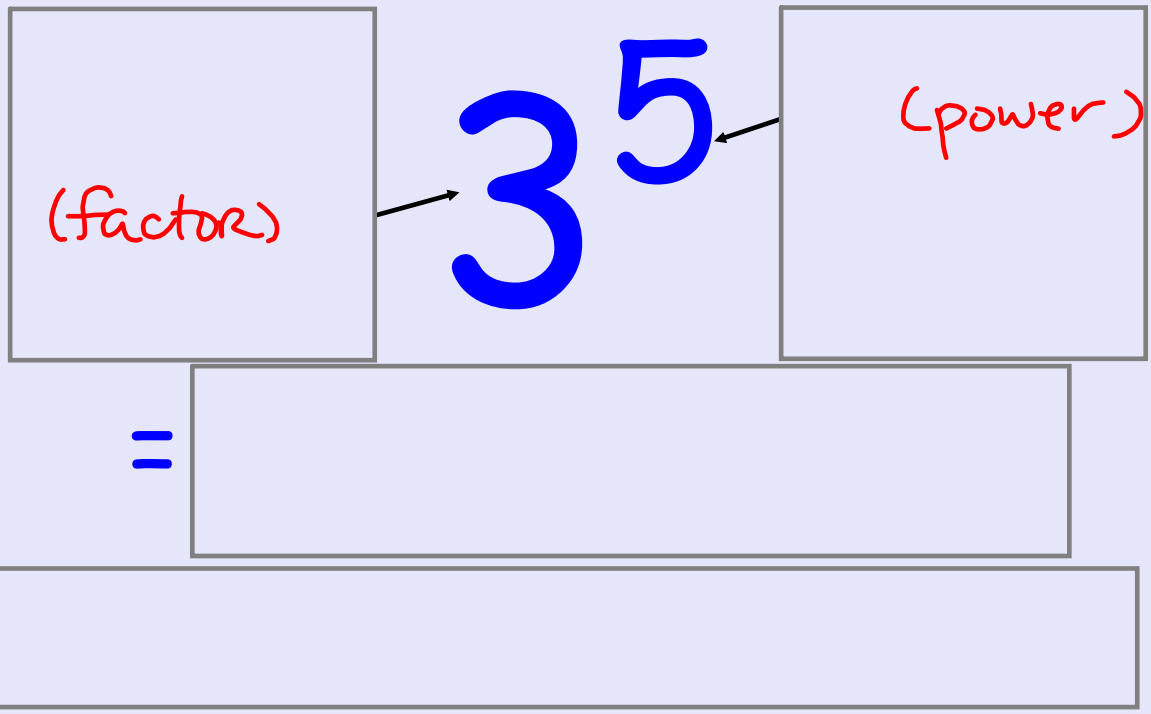
Powers and Exponents

Exponents are used to represent repeated multiplication - multiplying the same ~~---~~ base (number) over and over again.

NOTES



Write the expression in words and then write each power as the product of the BASE.

multiply

NOTES

2^6 = two to power of six
= 2 x 2 x 2 x 2 x 2 x 2
= 64

3^8 = three to power of eight
= 3 x 3 x 3 x 3 x 3 x 3 x 3 x 3
= 6561

8^3 = eight to power of three
= 8 x 8 x 8
= 512

Write each product using an exponent. Then find its value.

$4 \times 4 \times 4 \times 4 \times 4 = 4^5 = 1024$

$6 \times 6 \times 6 = 6^3 = 216$

NOTES

$1 \times 1 \times 1 \times 1 \times 1 \times 1 \times 1 = 1^7 = 1$

$7 \times 7 = 7^2 = 49$

$5 \times 5 \times 5 \times 5 =$ $5^4 = 625$

$2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 =$ $2^8 = 256$

There are some common phrases that are used to name an exponent.

Rewrite the statements using exponents.

five cubed = 5^3

four squared = 4^2

eight cubed = 8^3

ten squared = 10^2

$(9 - 2^2 + 10 \times 8) \div 5$ B E D M A S

2×2

$= (9 - 4 + 80) \div 5$

$= 85 \div 5$

$= 17$

Complete the missing sections in each row.

Exponent	Expanded Form	Value
4^3	$4 \times 4 \times 4$	64
3^4	$3 \times 3 \times 3 \times 3$	81
10^2	10×10	100
5^3	$5 \times 5 \times 5$	125
2^7	$2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$	128
11^2	11×11	121

BEDMAS

$(9 - 2^2 + 10 \times 8) \div 5$

2×2

$= (9 - 4 + 80) \div 5$

$= 85 \div 5$

$= 17$

Drag the numbers up to make a base and an exponent that equals the given answer.

$8^2 = 64$ $5^3 = 125$

$4^3 = 64$

$2^6 = 64$

$2^5 = 32$ $3^3 = 27$

$11^2 = 121$ $10^3 = 1000$

0 1 2 3 4 5 6 7 8 9