



Worksheet: Exponents

Mathematics / Middle School / Expressions and Equations / Special Notations of Operations/ Exponents

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Exponents

Exponent
Base → $3^2 = \underbrace{3 \times 3}_{\text{two times}} = 9$

$a^n = \underbrace{a \times a \times a \times \dots \times a_n}_{n \text{ times}}$

- 1 Name the parts of the exponential expression 3^2 .
- 2 Explain the expression 2^6 .
- 3 Find the right expression for the given example.
- 4 Determine the expression describing the total number of cats.
- 5 Transform the given expression into exponential form.
- 6 Calculate the given expressions.
- + with lots of tips, answer keys, and detailed answer explanations for all of the problems.



The complete package, **including all problems, hints, answers, and detailed answer explanations** is available for all sofatutor.com subscribers.



Name the parts of the exponential expression 3^2 .

Choose the correct statements.

- | | |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> <div style="border: 1px solid black; padding: 5px; width: 150px;">A
3 is called the exponent.</div> | <input type="checkbox"/> <div style="border: 1px solid black; padding: 5px; width: 150px;">B
3 is called the base.</div> |
| <input type="checkbox"/> <div style="border: 1px solid black; padding: 5px; width: 150px;">C
3 is called the denominator.</div> | <input type="checkbox"/> <div style="border: 1px solid black; padding: 5px; width: 150px;">D
2 is called the base.</div> |
| <input type="checkbox"/> <div style="border: 1px solid black; padding: 5px; width: 150px;">E
2 is called the top.</div> | <input type="checkbox"/> <div style="border: 1px solid black; padding: 5px; width: 150px;">F
2 is called the exponent.</div> |



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Hints for solving these problems

1
of 6

Name the parts of the exponential expression 3^2 .

Hint #1

If you have a fraction, like $\frac{N}{D}$, then D is called the denominator.

Hint #2

In this expression 4^7 , the 7 represents the exponent.



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Answers and detailed answer explanations for these problems

1
of 6

Name the parts of the exponential expression 3^2 .

Answer key: B, F

The main theme of this exercise is the exponent, which is a part of a power. An example for a power is 3^2 .

It's short-hand notation for writing a product with twice the factor 3; so we have $3^2 = 3 \times 3 = 9$. It's not $3 \times 2 = 6$, which is short-hand notation for a sum with twice the summand 3.

The whole expression 3^2 is called a power, namely 3 to the second power.

- 3 is the base.
- 2 is the exponent.