

Evaluating expressions

Evaluating expressions means that you'll be replacing variables with numbers (or "substituting numbers for variables," or "plugging in numbers for variables") and then simplifying using the order of operations until you arrive at a single number.

Sometimes you'll be able to plug in the numbers without issue, but there are other times (when there's multiplication, exponents, or when plugging in a negative number) where you'll need to plug in the numbers using parentheses.

When in doubt, use parentheses! It's better to have unnecessary parentheses than not to have parentheses that you really need.

Example

Use the given values to evaluate the expression when $x = 8$ and $y = 3$.

$$x - y$$

Plug in 8 for x , and 3 for y , and then simplify.

$$8 - 3$$

$$5$$



Let's try another example of evaluating expressions.

Example

Use the given values to evaluate the expression when $a = 2$, $b = -1$, and $c = 3$.

$$abc + c^3 + ab$$

Plug in 2 for a , -1 for b , and 3 for c . Remember that abc means $a \cdot b \cdot c$ and so we'll need to use parentheses when plugging in these values.

$$(2)(-1)(3) + (3)^3 + (2)(-1)$$

Now simplify using the order of operations. The exponent will be first, since none of our parentheses are used as grouping symbols and instead mean multiplication.

$$(2)(-1)(3) + 27 + (2)(-1)$$

Do the multiplication from left to right.

$$(-2)(3) + 27 + (2)(-1)$$

$$-6 + 27 + (2)(-1)$$

$$-6 + 27 - 2$$

Do the addition and subtraction, from left to right.

$$21 - 2$$



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