BIDMAS

Study Development Factsheet

BIDMAS is an acronym. It's an order of completing mathematical operations that everyone has agreed upon so that we all get the same answer to a calculation. It's also called PEMDAS, or BODMAS (and probably other names) and these all stand for the same thing- they just use other names for the operations (e.g. PEMDAS starts with parentheses, whereas BIDMAS starts with brackets, but these are the same thing). You'll probably have seen intentionally misleading maths problems posted on social media with people arguing in the comments over which answer is correct- usually we can use BIDMAS to find the correct answer. Maths should always be written in the clearest way possible, though.

BIDMAS

BIDMAS stands for

1. Brackets- perform any calculation inside a bracket before anything else. The calculation inside the bracket is also subject to BIDMAS.
2. Indices- also called powers, orders, or exponents. These are a shorthand for saying "multiply this by itself x times" and are written as: a^x
3. Division
4. Multiplication
5. Addition
6. Subtraction

Example

$$(3+2)^2 - 4 \times 7$$

If we follow BIDMAS:

1. Brackets: we perform the calculation inside the bracket, 3+2 = 5, so we now have
$$5^2 - 4 \times 7$$
2. Indices:
$$5^2 - 4 \times 7 = 25 - 4 \times 7$$
3. Division (none to do)

4. Multiplication:

$$25 - 4 \times 7 = 25 - 28$$

5. Addition (none to do)
6. Subtraction:

$$25 - 28 = -3$$

Exceptions

The only time that this rule may seem like it doesn't work is when a fraction is involved. For example, if we're trying to calculate

$$\frac{2+4}{10-8}$$

BIDMAS would tell us to do the division first (i.e. 2+4 divided by 10-8) but we can't do that unless we first calculate 2+4 and 10-8, which breaks the rules of BIDMAS.

The answer is that the fraction symbol has implied brackets around the top and around the bottom. So, our example should be read as:

$$\frac{(2+4)}{(10-8)}$$

$$\frac{(2+4)}{(10-8)} = \frac{6}{6} = 1$$

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