

What is BIDMAS?

BIDMAS is an acronym used to help remember the order in which multiple calculations should be carried out. This order is known as **ORDER OF OPERATIONS** or **PRECEDENCE**.

Why is order important?

Order is important in many activities. If you put your shoes on before your socks, then your socks could get wet! Calculations that involve multiple operations must be carried out in a specific order.



B	Brackets	Calculations in brackets are done first	for example: $(8 - 5)$
I	Indices	Indices and roots come next	for example: 5^3 or $\sqrt{16}$
D M	Division Multiplication	Division or multiplication are carried out in order from left to right	for example: $8 \div 4 \times 3$ first do $8 \div 4$, then $\times 3$
A S	Addition Subtraction	Addition and Subtraction are carried out in order from left to right	for example: $12 - 4 + 2$ first do $12 - 4$, then $+ 2$

When completing a calculation with multiple operations, follow these steps:

1. Use BIDMAS to decide which calculation should be completed first.
2. Carry out the first calculation.
3. Repeat steps 1 and 2 until the full calculation is complete.

Example

- $3 + 6 \times 2$
1. This calculation involves **addition** and **multiplication**. **Multiplication** is carried out first, before **addition**.
(It is important to keep the full calculation written in order, so highlight or underline the multiplication.)
 2. Carry out the **multiplication**.
 3. Then carry out the **addition**.
- $3 + 12 = 15$

Two-Step Calculations

Example

$$14 - 6 \times 2 + 5$$

Multiply

$$14 - 12 + 5$$

Add and subtract
(From left to right)

$$= 7$$

Example

$$2 \times 5 + 8 \div 4$$

Multiply and Divide
(These can be done in one step.)

$$10 + 2$$

Add

$$= 12$$

Example

$$21 \div (2 + 5)$$

Brackets
(Add 2 and 5 first)

$$21 \div 7$$

Divide

$$= 3$$

Multiple-Step Calculations

Example

$$(14 + 6) - 5 \times 2$$

Brackets

$$20 - 5 \times 2$$

Multiply

$$20 - 10$$

Subtract

$$= 10$$

Example

$$3 + 4^2 \div 2$$

Indices

$$3 + 16 \div 2$$

Divide

$$3 + 8$$

Add

$$= 11$$

Example

$$5 \times 3^2 + (10 - 6)$$

Brackets

$$5 \times 3^2 + 4$$

Indices

$$5 \times 9 + 4$$

Multiply

$$45 + 4$$

Add

$$= 49$$

Example

$$10 - (3^2 + 6) \div 5$$

Indices inside Brackets

$$10 - (9 + 6) \div 5$$

Brackets

$$10 - 15 \div 5$$

Divide

$$10 - 3$$

Subtract

$$= 7$$

Example

$$10 \div 5 - 2^3 \times (8 - 5)^2$$

Brackets

$$10 \div 5 - 2^3 \times 3^2$$

Indices

$$10 \div 5 - 8 \times 9$$

Multiply and Divide

$$2 - 72$$

Subtract

$$= -70$$

Level 6

Understand and use order of precedence in numerical calculations, including the use of brackets.

What is BIDMAS?

BIDMAS is an acronym used to help remember the order in which multiple calculations should be carried out. This order is known as **ORDER OF OPERATIONS** or **PRECEDENCE**.

Why is order important?

Order is important in many activities. If you put your shoes on before your socks, then your socks could get wet! Calculations that involve multiple operations must be carried out in a specific order.

Real-Life Multiple-Step Operations

Order is important in many areas of life. When baking a cake, it is important to follow the method in the recipe. If you cook the mixture before adding the eggs you won't get a cake, at least not one you can serve. It is also important to follow the order of operations for real-life calculations.

Example 1

Ross buys 2 Hawaiian pizzas and pays with £20 cash. How much change will he get?

We can work this out by writing the following calculation.

$$20 - 2 \times 8.90$$

If this calculation was carried out in the wrong order Ross would receive £160.20 as change - which would be impossible!

However, following BIDMAS rules

$$\begin{aligned} 20 - 2 \times 8.90 & \text{ (Multiply first)} \\ & = 20 - 17.80 \text{ (Then subtract)} \\ & = 2.20 \end{aligned}$$

Ross gets **£2.20 change**.

Example 2

Neve and her 4 friends are buying pizzas and side dishes for dinner. They buy 2 pepperoni pizzas, 1 Hawaiian pizza and 3 portions of fries. The cost will be split between them equally.

We can work this out by writing the following calculation.

$$9.90 \times 2 + 8.90 + 3.50 \times 3 \div 5$$

If this calculation was carried out in the wrong order the cost for each person could be £19.32 - expensive dinner!

Therefore, we need to group the 2 pepperoni pizzas and 3 portions of fries together. We also need to group the whole order so the cost can be split equally between all 5 friends. We can group using brackets.

Inserting brackets and using BIDMAS

$$\begin{aligned} & ((9.90 \times 2) + 8.90 + (3.50 \times 3)) \div 5 \\ & = (19.80 + 8.90 + 10.50) \div 5 \\ & = 39.2 \div 5 \\ & = 7.84 \end{aligned}$$

Each friend will pay **£7.84**

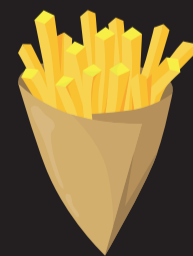
PIZZA MENU



Pepperoni Pizza £9.90



Hawaiian Pizza £8.90



Fries £3.50

Level 6

Understand and use order of precedence in numerical calculations, including the use of brackets.