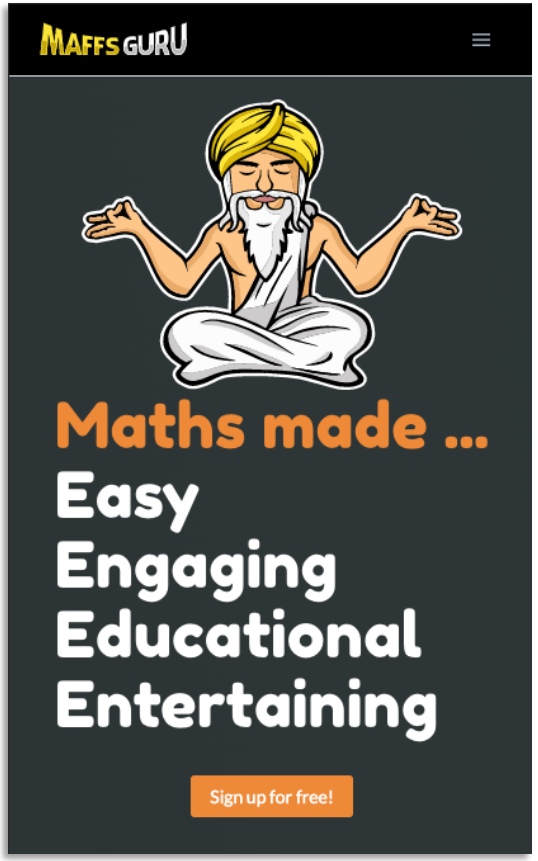


Order of Operations

Year 11 General Maths
Units 1 and 2

www.maffsguru.com

This is where Darren goes



Videos come with downloadable notes at
www.maffsguru.com

Learning Objectives

By the end of the lesson I would hope that you have an understanding and be able to apply to questions the following concepts:

- Understand what an order of operation is
- Use BIDMAS (or BODMAS) to unpack a question where there are multiple operations
- Apply the above rule to a range of questions

This is where Darren goes

Recap

This is the first lesson in this series so there isn't really that much to recap other than stating that this work will cover a lot of the work you will have completed in previous year levels.

This is going to be more of an introduction to the work which is coming later in the course.

This is where Darren goes

Is it BODMAS or BIDMAS?

Not quite the same argument as whether or not Vegemite is nice … but in Mathematical circles it causes quite the stir!



B rackets	B
I ndices	O rder/of
D ivision	D
M ultiplication	M
A ddition	A
S ubtraction	S

This is where Darren goes

I'm going to use BIDMAS

There is a strict "Order of Operations" which we need to use when doing calculations. This order is described using the word BIDMAS.

If you are ever unsure, then follow the order BIDMAS suggests.

It's important to always show your working out.

$3 + 2 \times 6$

$=$

$=$

Brackets

Indices

Division

Multiplication

Addition

Subtraction

This is where Darren goes

Can’t I just use my calculator?

Fair point.

But … calculators get it wrong!

At least they used to.



Old style “Four function” calculator



Modern CAS calculator

- Brackets
- Indices
- Division
- Multiplication
- Addition
- Subtraction

$2 + 3 \times 4 = 20$

$5 \times 4 = 20$

$2 + 3 \times 4 = 14$

$2 + 12 = 14$

This is where Darren goes

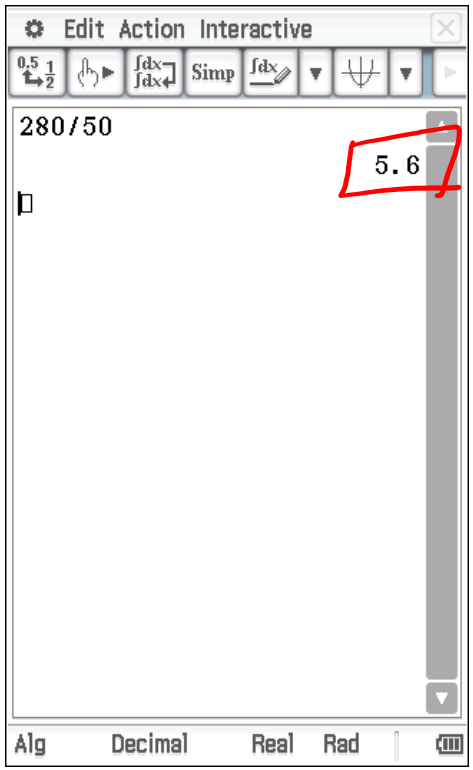
Following the rules of BIDMAS …

Don't always believe in what your calculator tells you. Even when using the CAS, there are times when the answer will be "right" but also wrong.

For example:

I wish to book a number of buses to transport the local Mathematics Association to a Sudoku event. We have 280 members. If a bus can hold 50 people, how many buses will I need?

$280 \div 50 = 5.6$



Brackets

Indices

Division

Multiplication

Addition

Subtraction

This is where Darren goes

Back to some examples of how to use BIDMAS

Evaluate the following:

$3 + 6 \times 8$

$3 + 6 \times 8$

$= 3 + 48$

$= 51$

Brackets

Indices

Division

~~Multiplication~~

~~Addition~~

Subtraction

This is where Darren goes

Examples have been extracted, with permission, from the Cambridge General Mathematics Units 1 and 2 Textbook

Back to some examples of how to use BIDMAS

Evaluate the following:

$(3 + 6) \times 8$

$(3 + 6) \times 8$

$= 9 \times 8$

$= 72$

~~Brackets~~

Indices

Division

~~Multiplication~~

Addition

Subtraction

This is where Darren goes

Examples have been extracted, with permission, from the Cambridge General Mathematics Units 1 and 2 Textbook

Back to some examples of how to use BIDMAS

Evaluate the following:

$8 \div 2 - 2$

$8 \div 2 - 2$

$= 4 - 2$

$= 2$

Brackets

Indices

~~Division~~

Multiplication

Addition

~~Subtraction~~

This is where Darren goes

Examples have been extracted, with permission, from the Cambridge General Mathematics Units 1 and 2 Textbook

Back to some examples of how to use BIDMAS

Evaluate the following:

$23 - (8 - 5)$

$23 - (8 - 5)$

$= 23 - 3$

$= 20$

~~Brackets~~

Indices

Division

Multiplication

Addition

~~Subtraction~~

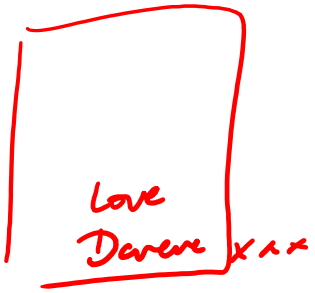
This is where Darren goes

Examples have been extracted, with permission, from the Cambridge General Mathematics Units 1 and 2 Textbook

Back to some examples of how to use BIDMAS

Evaluate the following:

$(4)3 - 2$



$(4)3 - 2$

$= (4) \times 3 - 2$

$= 4 \times 3 - 2$

$= 12 - 2$

$= 10$

~~Brackets~~

Indices

Division

~~Multiplication~~

Addition

~~Subtraction~~

This is where Darren goes

Examples have been extracted, with permission, from the Cambridge General Mathematics Units 1 and 2 Textbook

Back to some examples of how to use BIDMAS

Evaluate the following:

$3 + 5(x - 1)$

$3 + 5.(x - 1)$

$= 3 + 5 \times (x - 1)$

$= 3 + 5x - 5$

$= 5x - 2$

Brackets

Indices

Division

Multiplication

Addition

Subtraction

This is where Darren goes

Examples have been extracted, with permission, from the Cambridge General Mathematics Units 1 and 2 Textbook

Back to some examples of how to use BIDMAS

Evaluate the following:

$(3 \times 8.5 - 4) - (4.1 + 5.4 \div 2)$

$(3 \times 8.5 - 4) - (4.1 + 5.4 \div 2)$

$= (25.5 - 4) - (4.1 + 2.7)$

$= 21.5 - 6.8$

$= 14.7$

21.5
- 6.8
14.7

~~Brackets~~

Indices

Division

~~Multiplication~~

Addition

Subtraction

This is where Darren goes

Examples have been extracted, with permission, from the Cambridge General Mathematics Units 1 and 2 Textbook

Thanks for watching

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Lesson notes can be downloaded too

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