BIDMAS helps us work out complicated expressions like

\[ 27 - 4(1 + 5 	imes 2) + 2. \]

Go down the list of BIDMAS operations from the top until you come to an operation present in the expression. You can see that there is a bracket in the expression above so you need to work out the content of the bracket first.

Apply BIDMAS again to the content of the bracket. There is a multiplication inside the bracket so work it out first.

\[ 27 - 4(1 + 5 	imes 2) + 2 = 27 - 4(1 + 10) + 2. \]

Then do the addition inside the bracket on the right-hand side to get

\[ 27 - 4 	imes 11 + 2. \]

Then we do the multiplication in the middle term and find

\[ 27 - 44 + 2. \]

Then work from left to right so subtract 44 from 27 to get

\[ -17 + 2. \]

Then add 2 to \(-17\) and we end up with \(-15.\)

So we have shown that \(27 - 4(1 + 5 	imes 2) + 2 = -15.\)
BIDMAS example with index

Use BIDMAS to work out  

\[ 200 - 3 \times (1 + 5 \times 2^3) + 7. \]

Work out the bracket first.  

Notice the power 2\(^3\) inside the bracket and remember that  

\[ 2^3 = 2 \times 2 \times 2 = 8. \]

Next do the multiplication inside the bracket on the right-hand side to get  

\[ 200 - 3 \times (1 + 40) + 7. \]

Do the addition inside the bracket to get  

\[ 200 - 3 \times 41 + 7. \]

Do the multiplication in the middle term to get  

\[ 200 - 123 + 7. \]

Then work from left to right  

\[ 200 - 123 + 7 = 77 + 7 = 84. \]

So we have shown that  

\[ 27 - 4(1 + 5 \times 2) + 2 = 84. \]

When would you use this type of simplification?  

You can use simplification throughout your mathematic studies, for example when simplifying: series, integrals, derivatives, vectors . . . the list is endless so make sure you are happy with applying the BIDMAS rules and manipulating negative numbers.