Order of Operations – BOMDAS (or BODMAS) – A Tip to Remember

When students begin to be taught, and start to practice, the rules for the "order of operations" in mathematical problems, they often get a fairly clear understanding that multiplication and division operations need to be done before addition and subtraction.

So, they will have little trouble in performing calculations as follows:

69 – 3 x 13		72 ÷ 8 + 1
= 69 – 39	or,	= 9 + 1
= 30		= 10

However, they can end up being a bit confused when there is more than one multiplication and division operation in the problem.

For example, when presented with a problem like 48 ÷ 8 ÷ 2, some will proceed as follows:

48 ÷ 8 ÷ 2

= 48 ÷ 4

= 12

which is NOT correct.

 The rule, or convention, which has been forgotten above, is that:

"Multiplication or division should be calculated next," (after brackets) "whichever comes first when working from left to right" [Kalra, p 35 – my emphasis]

So, the correct working / answer is:

48 ÷ 8 ÷ 2

= 6 ÷ 2

= 3

The same thing applies when subtraction is included in a problem.

For example, some students will proceed with the problem 26 – 2 + 10 as follows:

26 – 2 + 10
= 26 – 12
= 14

Which again, is NOT correct, the correct answer being:

26 – 2 + 10
= 24 + 10
= 34

Conclusion and Practice

When "order of operations" problems are attempted, students need to recall that, apart from the "brackets first, multiplication / division next, addition / subtraction last" logic; it is also important to recall that operations need to be done in order from left to right.

Practice problems:

1)   20 – 4 + 5 =

2)   18 ÷ 6 ÷ 3 =

3)   20 x 3 – 8 x 4 – 2 =

4)   15 + 12 ÷ 3 – 2 =

5)   50 – (18 – 4) ÷ 2 =

6)   36 ÷ (6 + 6 ÷ 2) =

Reference

Kalra, AS, *Excel Basic Skills – Multiplication and Division – Years 5-6*, Pascal Press, Glebe NSW, 1998.

Answers: 1) 21   2) 1   3) 26   4) 17   5) 43   6) 4