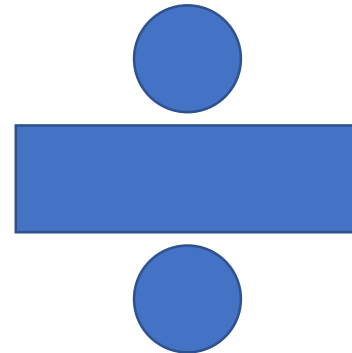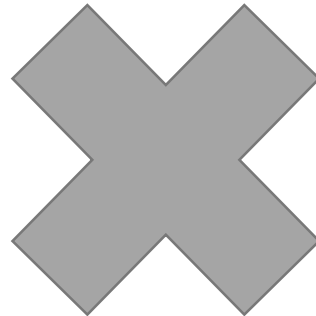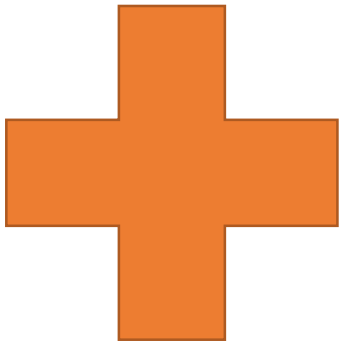# The Order Of Mathematical Operation

OR

When you formula doesn't do what you thought it would!

Complex Formulas

- Complex DOESN'T mean complicated!
- It has more than one Operator
- You already know most common ones...

How You Would THINK it works

- Using a single operator multiple times is fine…
- 1+1 will always equal 2
- 1+1+1+1+1 will always equal 5…
- Because we only used <u>one</u> operator… +
- BUT…if we said 3 plus 3 divided by 2…
- And wrote the formula as =3+3/2
- We may think the answer is 3…
- BUT…it ISN'T   …it's actually 4.5!!!

Understanding The Order

- The order in which ALL mathematical operations are executed is…
- 1st Brackets ( ) Correctly referred to as Parenthesis
- 2nd Multiplication *
- 3rd Division /
- 4th Addition +
- 5th Subtraction -
- Just remember Bless My Dear Aunt Sally

How It Works

When we say 3 + 3 / 2, our thinking goes…

3 + 3 = 6

6 / 2 = 3

BUT, think of Bless My Dear Aunt Sally

D (for division) comes before A (for addition)

So in a formula, the division is done before the addition

3 / 2 = 1.5 (The division part is done first)…

Then comes the addition… 3 + 1.5 = 4.5

THAT'S how Excel will do it!

A Good Habit To Get Into

When thinking about your formula,

It may help to think in brackets, as Brackets come first...

(3 + 3) = 6   Brackets are done...

6 / 2 = 3   EVERYTHING else comes after B

Just remember Bless My Dear Aunt Sally

So our formula would be...

= (3 + 3) / 2

That will ALWAYS get the answer you expect!

ALWAYS Remember…

Bless

My

Dear

Aunt

Sally