



## Order of Operations (BEDMAS)

When evaluating a mathematical expression, the operations must be done in a certain order. This order is sometimes called BEDMAS, after the first letters of the operations:

<b>B</b> rackets:	Evaluate what's inside the parentheses first. If there are brackets within brackets, do the ones that are farthest inside first. This step includes anything under a square root sign, the numerator or denominator of a fraction, or an expression in an exponent.
<b>E</b> xponents:	Calculate the results of any exponential expressions. Since square roots can also be exponents, they should also be evaluated in this step.
<b>D</b> ivision & <b>M</b> ultiplication:	Evaluate these from left to right. Multiplication and division have equal priority in order of operations.
<b>A</b> ddition & <b>S</b> ubtraction:	Evaluate these last, from left to right. Addition and subtraction also have equal priority.

Let's try some examples:

- 1)  $3 + 3 \times 4$   
 $= 3 + 12$  (We multiply before we add.)  
 $= 15$  (We add last.)
- 2)  $(3 + 3) \times 4$   
 $= 6 \times 4$  (We do the brackets first. We add, and now because we have one positive number in brackets, we remove them.)  
 $= 24$  (We multiply, because it's the only step left.)
- 3)  $2(2 + 2(3 - 6 + 3 \times 4 - 6) + 6^2)$   
 $= 2(2 + 2(3 - 6 - 9) + 6^2)$  (We start in the inside brackets. We multiply and divide, from left to right, first.)  
 $= 2(2 + 2(-14) + 6^2)$  (We subtract. Because the brackets contain a negative number, we must keep them.)  
 $= 2(2 + 2(-14) + 36)$  (We evaluate exponents before anything else.)  
 $= 2(2 - 28 + 36)$  (The number in front of the brackets means multiplication. We do the square brackets next, and we multiply before we add or subtract.)  
 $= 2 \times 9$  (We add and subtract from left to right. We can replace the brackets with a "+" sign.)  
 $= 18$  (We multiply, because it's the only step left.)