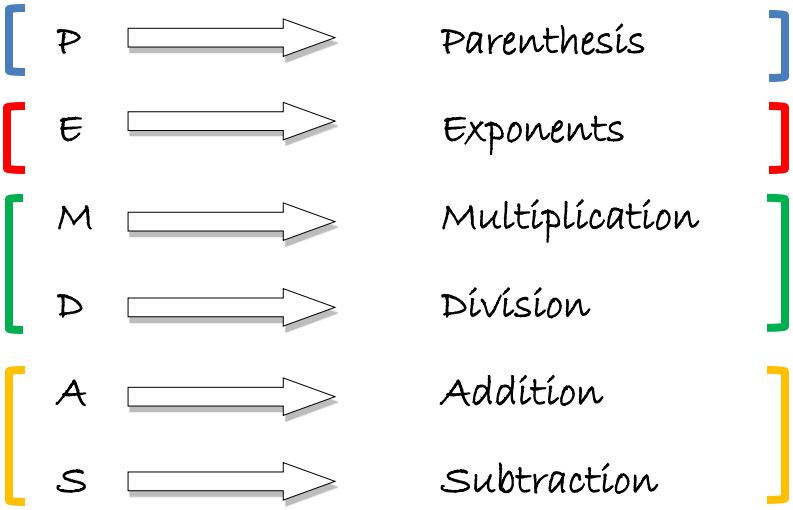
Order of Operations

The acronym often taught for the order of operations is **PEMDAS.**



NOTE:

Absolute values and radicals fall into the parenthesis and grouping symbols category.

Multiplication and division must be done at the same time working **LEFT** to **RIGHT,** or whichever operation comes first.

Addition and subtraction must be done at the same time working **LEFT** to **RIGHT,** or whichever operation comes first.

The order of operations is just a guideline. It does not include absolute values, radicals, etc…

We will soon outgrow PEMDAS.

NOTE: To help you remember the acronym PEMDAS, use phrases to help you remember the order of operations or create your own, for example:

-Please Excuse My Dear Aunt Sally
-Please Email My Dad A Shark
-Picky Eaters Make Dinner A Struggle
-Purple Elephants May Destroy A School

Example 1:

Evaluate:

a) $7 - 5 + 1 =$

b) $8 \div 4 + 4 =$

c) $4 \div 2^2 + 3 - 1 - 2$

d) $(4 + 1)^2 - 3^2$

Example 2:

Evaluate:

$$\frac{7(2^3-1)+1}{10-3^2}$$

NOTE: We must simplify the numerator and the denominator separately. Then divide if possible.

$$\frac{7(2^3-1)+1}{10-3^2}=$$

Order of Operations — Practice Problems

Evaluate:

a) $9 - 4 + 7$

b) $16 \div 8 \cdot 5$

c) $18 \div 3^2 + 8 - (3 - 2)$

d) $\frac{6(4^2-10)-4}{5^2-9}$