1.2 -> EXPONENTS &

ORDER OF OPERATIONS

③ Left→Right ④

* Please Excuse My Dear Aunt Sally

① ②
$[\ ]$ P E x^2 M $3x$ D $\div$ A $+$ S $-$
$($ $)$ a x 3^3 u ab i $\frac{a}{b}$ d u
r p 4^5 l 3·4 v d b
e o t 3(4) i $\frac{15}{3}$ d t
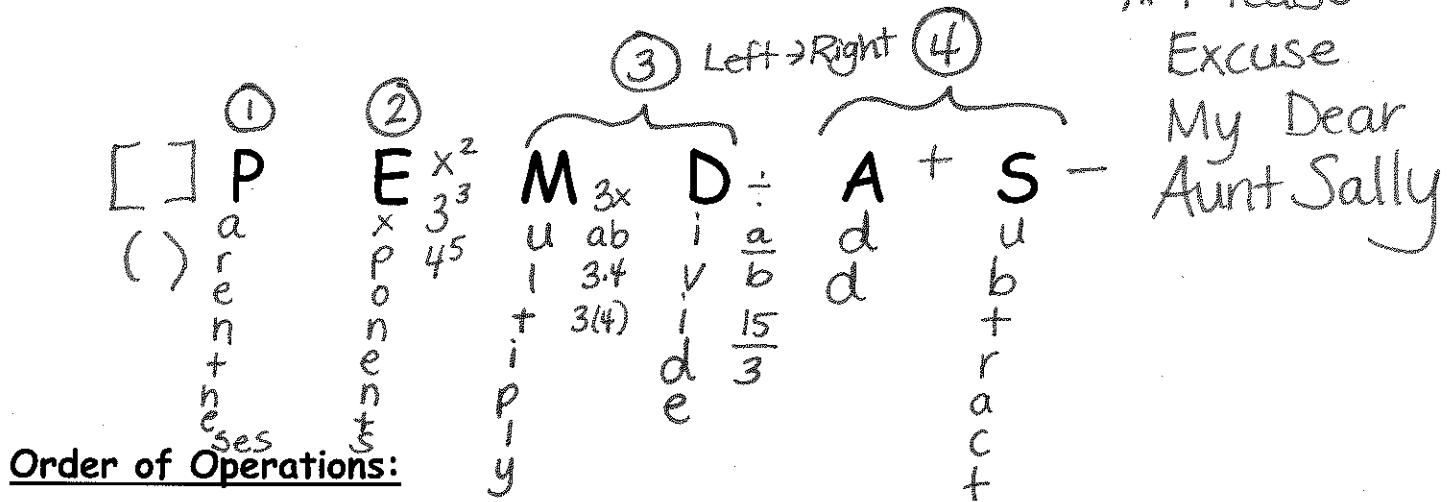n n i d r
t e p e a
h n l c
e t y t
ses

Order of Operations:

1. Do anything inside __grouping__ __symbols__.
2. Do __exponents__ next.
3. __Multiply__ and __divide__ from left to right (unless parentheses).
4. __Add__ and __Subtract__ from left to right (unless parentheses).

Simplify: To replace an expression with its simplest name or form.

1. Simplify each expression:

a. $6 - 10 \div 5$

$6 - 2$

$\boxed{4}$

b. $3 \cdot 6 - 4^2 \div 2$

$3 \cdot 6 - 16 \div 2$

$18 - 16 \div 2$

$18 - 8$

$\boxed{10}$

c. $4 \cdot 7 + 4 \div 2^2$

$4 \cdot 7 + 4 \div 4$

$28 + 4 \div 4$

$28 + 1$

$\boxed{29}$

Exponent: Tells how many times a number, the _base_, is used as a factor.

Power: Has two parts, a _base_ and an exponent.

Example:

$$2^4 = 2 \cdot 2 \cdot 2 \cdot 2$$

Base $\leftarrow 2^{4 \leftarrow \text{Exponent}}$

Power   Factors

Evaluate: To solve/Get an answer

2. Evaluate each expression for c = 2 and d = 5. Plug 'N' Hug

   a. $4c - 2d \div c$

   $4(2) - 2(5) \div 2$
   $8 - 10 \div 2$
   $8 - 5 = \boxed{3}$

   b. $c^4 - d \cdot 2$

   $(2)^4 - (5) \cdot 2$
   $16 - 5 \cdot 2$
   $16 - 10 = \boxed{6}$

   c. $40 - d^2 + cd \cdot 3$

   $40 - (5)^2 + (2)(5) \cdot 3$
   $40 - 25 + (2)(5) \cdot 3$
   $40 - 25 + 30 \quad *L \rightarrow R$
   $15 + 30 = \boxed{45}$

3. Find the total cost of a pair of jeans if the price is $32 and the sales tax rate is 8%.

   $C = 32 + 32(.08)$
   $C = 32 + 2.56$
   $\boxed{C = \$34.56}$

4. Simplify each expression:

   a. $(5 + 3) \div 2 + (5^2 - 3)$

   $(5+3) \div 2 + (25 - 3)$
   $8 \div 2 + 22$
   $4 + 22$
   $\boxed{26}$

   b. $8 \div (9 - 7) + (13 \div 2)$

   $8 \div 2 + 6.5$
   $4 + 6.5$
   $\boxed{10.5}$

5. Evaluate each expression for r = 9 and t = 14   Plug 'N' Hug

a. rt^2

$(9)(14)^2$

$(9)(196)$

$\boxed{1764}$

b. r^2t

$(9)^2(14)$

$(81)(14)$

$\boxed{1134}$

c. $(rt)^2$

$(9 \cdot 14)^2$

$(126)^2$

$\boxed{15,876}$

6. Simplify:

PEMDAS

*Start at the inner-most ( )

a. $5[4 + 3(2^2 + 1)]$

$5[4 + 3(4 + 1)]$

$5[4 + 3(5)]$

$5[4 + 15]$

$5(19)$

$\boxed{95}$

b. $12 + 3[18 - 5(16 - 13)]$

$12 + 3[18 - 5(3)]$

$12 + 3[18 - 15]$

$12 + 3(3)$

$12 + 9$

$\boxed{21}$