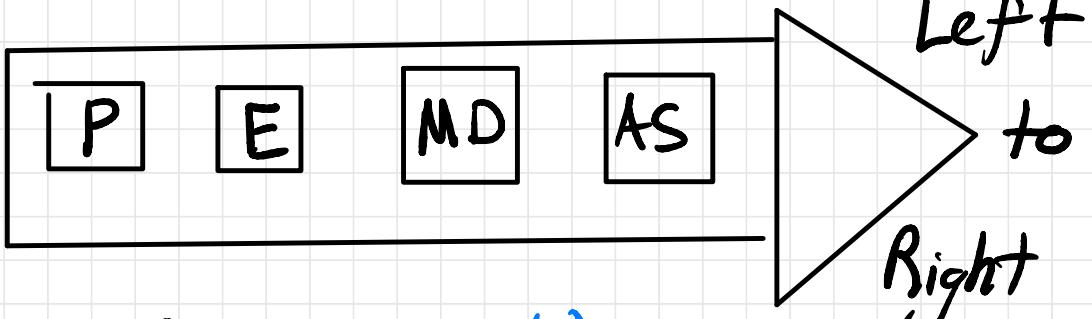


# Order of Operations Review



P: Parentheses ( )

E: Exponents  $\sqrt{x}$ ,  $x^3$ , etc...

{ M: Multiply  $3 \times 2$ ,  $3 * 2$

{ D: Divide  $4 \div 2$ ,  $4 / 2$

{ A: Add  $5 + b$

{ S: Subtract  $5 - 6$

**Ex 1.1**  $(3+4)/(4*7)*3^2$

- ①  $(7)/(28)*9$
- ② All MD remaining, so left to right!  
↳  $(1/4)*9$
- ③  $9/4$

**Ex 1.2:**  $(4/2)(2+3) + 8^2(4/2)$

- ①  $(2)(5) + 8^2(2)$
- ②  $10 + 64(2)$
- ③  $10 + 128$
- ④  $138$

# Commonly Used Math Notation

$|x|$  = absolute value of  $x$

Ex2:  $|4-7| = |-3| = 3, |3| = 3$

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$\sum$ , called Sigma, represents a summation

Ex3:  $\sum_{t=0}^2 3^t = 3^0^* + 3^1 + 3^2$

(★ Note that anything to the power of 0 is 1, ex:  $4^0 = 1, 5^0 = 1, 0^0 = 1$ )

$$= 1 + 3 + 9 = 13$$

We took the operation  $3^t$  and applied it at all values of  $t$  (0, 1, 2) and then summed the results

# Multiplication

Can be represented many ways.

For example, let  $\alpha$  (alpha) and  $\beta$  (beta) be two constants\*

\* sidenote: when we say something is a constant, it means it takes on some fixed value. for example,  $\beta$  could be 5, 4.12, etc..

Then the following are all equivalent :

$$\alpha \cdot \beta$$

All of these are saying  
"alpha times beta)

$$\alpha * \beta$$

$$\alpha \beta$$

$$(\alpha)(\beta)$$

# Scientific Notation

654 00000

$$= 6.54 \times 10^7 = 6.54 \text{e}7$$

What's an easy way to find 7?

6.5400000  
↓↓↓↓↓↓  
| 2 3 4 5 6 7

Always should be expressing something in this notation as a number between 0 and 10 (exclusive)

$65.4 \times 10^6$  is not correct, since 65.4 is not between 0 and 10.

## Other Notes

$\bar{X}$  is an average (the bar over the X indicates it is an average)

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$$\sqrt{9} = \pm 3 \quad \text{be careful when using square root, it can be both positive and negative !!}$$

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$\frac{1}{3}$  is equivalent to  $3^{-1}$

(read as 3 to the power of negative 1)

Note that  $3 = 3^1$  (any number is equal to itself raised to the power of 1)