

# U1:L5 Order of Operations

"Operations" mean things like add, subtract, multiply, divide, squaring, etc.

Operations are usually the "symbols" that appear in a mathematical expression.

when you see something like...

$$7 + (6 \times 5^2 + 3)$$

expression

equation ≠

... what part should you calculate first?

Start at the left and go to the right?  
Or go from right to left?

NEITHER!

Warning: Calculate them in the wrong order, and you will get a wrong answer!

$$4 \times 2 + (6 - 2) + 2^2$$

<b>B</b>	Brackets	$(6 - 2)$
<b>E</b>	exponents	$2^2$
<b>D</b>	division	
<b>M</b>	multiplication	$4 \times 2$ $(4)(2)$ $4 \cdot 2$ $8a$
<b>A</b>	Addition	if we have more than one, move from L → R
<b>S</b>	Subtraction	

## EXMAPLES:

$$\boxed{(3+3) \times 3 - 3^3 \div 3} + 3$$

$$[ \quad \times 3 - 3^3 - 3 ] + 3$$

$$[ 6 \times 3 - 27 - 3 ] + 3$$

$$[ 6 \times 3 - 9 ] + 3$$

$$\boxed{18 - 9} + 3$$

$$9 + 3$$

$$\boxed{12}$$

$$\boxed{\left(\frac{1}{2} \times \frac{2}{2}\right) + \frac{1}{2} - \frac{1}{2} \times \frac{1}{2}}$$

$$\left(\frac{2}{2}\right) + \frac{1}{2} - \frac{1}{2} \times \frac{1}{2}$$

$$\frac{2}{2} + \frac{1}{2} - \frac{1}{4}$$

$$\frac{3}{2} - \frac{1}{4}$$

$$\frac{6}{4} - \frac{1}{4}$$

$$\frac{5}{4}$$

$$\boxed{\frac{5}{4}}$$

$$\boxed{(1.64 - 0) \div 2.0^1 + 14.92}$$

$$(1.64) \div 2.0^1 + 14.92$$

$$\boxed{1.64 \div 2.0} + 14.92$$

$$0.82 + 14.92$$

$$\begin{array}{r} + 0.82 \\ 14.92 \\ \hline \boxed{15.74} \end{array}$$