

# Order of Operations

The order of operations is based on one kind of "big idea": That more powerful operations are done before less powerful (unless we're explicitly told otherwise).

1. $7 - 3 \times 2$	3. $7 + 2 \times 3$
$7 - 6$	$7 + 6$
1	13
2. $8 - 4 \div 2$	4. $8 + 4 \times 2 - 1$
$8 - 2$	$8 + 8 - 1$
6	$16 - 1$
	15

Which of these is the most powerful?  
addition, subtraction, division, multiplication

$\times$   
multiplication and  $\div$  division are the inverse of each other

$+$   $-$   
addition and subtraction are the inverse of each other

So we will state that there are two 'tiers' of power (for now)

$\times$   $\div$   
Most powerful: multiplication and division

$+$   $-$   
Least powerful: addition and subtraction

BUT, we can be told EXPLICITLY to do

something first, with parenthesis - () or

brackets - []

## OOPS examples

$$6 + 2 \times 3 - 1 =$$

$$(6 + 6) - 1 =$$

$$12 - 1 =$$

$$11 =$$

$$8 - 3 \times 2 \div 3 \times 2$$

$$8 - (6 \div 3) \times 2$$

$$8 - (2 \times 2)$$

$$8 - 4$$

$$4$$

$$3 + 4 \times 2 \div 4$$

$$3 + (8 \div 4)$$

$$3 + 2$$

$$5$$

$$2 \times 3 \div 2 \times 3 - 2 \times 4$$

$$(6 \div 2) \times 3 - 2 \times 4$$

$$(3 \times 3) - 2 \times 4$$

$$9 - (2 \times 4)$$

$$9 - 8$$

$$1$$

$$8 - 3 \times 2 + 4 \times 4$$

$$8 - 6 + (4 \times 4)$$

$$(8 - 6) + 16$$

$$2 + 16$$

$$18$$

$$(9 - 3 \times 3) \times 4 \times 45672351436$$

$$(9 - 9) \times 4 \times 45672351436$$

$$(0 \times 4) \times 45672351436$$

$$0 \times 45672351436$$

$$0$$