8/27-8/28

Order of Operations

Questions?/Don't Forgets	Main Ideas/Summary

Can anyone give me an example of a math operation?
$+ \; - \; \times \; \div \; x^{2} \; (\;) \; | \; |$

How many operations in $1+2=$

But what happens when we have >1 operation?

Ex: $1+2\times3=?$

~~Take 30 ÷~~

$1+2\times3$ or $1+2\times3$

$3\times3=9$ $\quad$ $1+6=7$

Are these both correct? No
The math world has agreed on the correct order. We call these the Order of Operations.

• Order of Operations-

Ex: $1+2\times3 \rightarrow 1+6=7$

	Order of Operations
First:	Simplify parentheses and other group symbols
Second:	Simplify Exponents
Third:	Simplify multiplication/division left to right
Fourth:	Simplify addition/subtraction left to right

Please → **P** Parentheses and other grouping symbols *

Excuse **E** Exponents

My **M** Multiplication

Dear **D** Division

Aunt **A** Addition

Sally **S** Subtraction

Way to indicate x

$\cong 4\times(12\div4)$

List the operations in each expression.

1. $15+3\bullet4-2=$

A addition
M multiplication
S subtraction

2. $8-4(12\div4)+6=$

S subtraction
M multiplication
P parentheses
D division
A addition

3. $\frac{2(-4)+22}{4^2-9}$ → separately → denominator separately

groupins
multiplication
addition
exponent
subtraction

4. $3|4^2+8\div 2|=$

multiplication
absolute value
addition
exponent
divisio

Solve using the correct order of operations.

5. $12+4\cdot 2-1=$

$12+8-1=$
$20-1=19$

6. $8-4(12\div 4)+6=$

PEMDAS
Simplify inside ( )

$8-4(3)+6=$
$8-12+6=$
$-4+6=2$

7. $5|4^2+6\div 2|=$

PEMDAS

Simplify inside the absolute value first

$5|4^2+6\div 2|$
$5|16+6\div 2|$
$5|16+3|$
$5|19|$
$5\times|19|=5\times 19=95$

→ Any other GS w/in AV?
→ Exponents?
no?
AS?

8. $\frac{2(-4)+22}{4^2-9}=$

$2(-4)+22$ PEMDAS
$-8+22=14$

4^2-9 PEMDAS
$16-9=7$
$14/7=2$

9. $\frac{5^2-(5+4)}{|4-8|}=$

numerator
$5^2-(5+4)$
5^2-9
$25-9=16$

Denominator
$|4-8|$
$|-4|$
4

→ $\frac{16}{4}=4$

10. $3(48\div 4)+3(60-45)-2\cdot 8=$

$3(12)+3(15)-2\cdot 8$
$36+45-16$
$81-16$
$=65$