

Notes 1-1

Int 1

Order of Operations

Unit 1

What is the Order of Operations?

Brackets Braces

- 1<sup>st</sup>: Grouping Symbols ( ) [ ] { } **P**
- 2<sup>nd</sup>: **EXponents**  $4^2$  **E**
- 3<sup>rd</sup>: Multiplication & Division Left → Right **M & D**
- 4<sup>th</sup>: Addition & Subtraction Left → Right **A & S**

Ex. 1:  $27 - 25 \div 5 \cdot 3 + 9$

$27 - 5 \cdot 3 + 9$

$27 - 15 + 9$

$12 + 9$

$= \boxed{21}$

~~P~~  
~~E~~  
~~MD~~  
~~AS~~

Ex. 2:  $12 - 4 + 8 - 5 + 7$

$8 + 8 - 5 + 7$

$16 - 5 + 7$

$11 + 7$

$\boxed{18}$

$$\begin{array}{r} 27 \\ -15 \\ \hline 12 \end{array}$$

Use • not × for multiply!!!

~~P~~  
E  
MD  
AS

Ex. 3:  $\frac{3 \cdot 5 + 9 \div 3}{2(3)} = \frac{15 + 9 \div 3}{6} = \frac{15 + 3}{6}$

$\frac{18}{6} = \boxed{3}$

Ex. 4:  $2[7(3+6) - (8 \cdot 4 - 1)]$   
~~P~~  
E  
MD  
AS  
 $2[7(9) - (8 \cdot 4 - 1)]$   
 $32 - 1$   
 $2[7 \cdot 9 - (31)]$   
 $2[63 - 31]$   
 $2[32]$   
 $\boxed{64}$

$\frac{63}{-31}$   
 $\frac{63}{32}$

~~P~~  
E  
MD  
AS

Ex. 5:  $\frac{2(5^2)}{4^3 + 6^2} = \frac{2(25)}{64 + 36} = \frac{50}{100}$

$\begin{array}{r} 4 \\ \cdot 4 \\ \hline 216 \\ \cdot 4 \\ \hline 64 \end{array}$

$\begin{array}{r} 64 \\ + 36 \\ \hline 100 \end{array}$

$\frac{50 \div 50}{100 \div 50} = \boxed{\frac{1}{2}}$

Ex. 6:  $6[(3+4)^2 - 2(5-1)]$   
 $6[(7)^2 - 2(4)]$   
 $6[49 - 2(4)]$   
 $6[49 - 8]$   
 $6[41]$   
 $\boxed{246}$

$\begin{array}{r} 41 \\ \cdot 6 \\ \hline 246 \end{array}$