Pre-Algebra

1.2 The Order of Operations

Exponent: Tells how many times the base is multiplied together.

$\text{Base}^{\text{Exponent}}$

Ex) $4^2 = 4 \cdot 4 = 16$

Ex) $5^3 = 5 \cdot 5 \cdot 5 = 125$

Ex) $3^4 = 3 \cdot 3 \cdot 3 \cdot 3 = 81$

Order of Operations

Parenthesis ( ) [ ] {}
Exponents
Multiply > left to right
Divide
Add > left to right
Subtract

Ex) $7^2 + 6 \times 2$

$49 + 6 \times 2$

$49 + 12$

61

Ex) $(8 + 2 \times 3) + 3^3$

$(8 + 6)$

$14 + 3^3$

$3 \cdot 3 \cdot 3$

$14 + 27$

41

Ex) $\dfrac{8 \div (2) + (8 \times 2^2)}{(2 + 2^2)}$ $= \dfrac{36}{6} = 6$

$8 \div (2) + (8 \times 2^2)$ $(2 + 2^2)$

$8 \div (2) + (8 \times 4)$ $2 + 4$

$8 \div (2) + 32$ 6

$4 + 32$

36

Comparing Values:

$>$ $<$ $=$

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Ex) $(12 \div 2) + 1$ $\boxed{=}$ $12 \div 2 + 1$

$6 + 1$ $6 + 1$

7 7

Ex) $12 \div (2 + 1)$ $\boxed{<}$ $12 \div 2 + 1$

$12 \div 3$ $6 + 1$

4 7