1.2: Apply Order of Operations

Goals: *Use order of operations to evaluate algebraic expressions

---

What are the order of operations? What is the most common mistake made from using this acronym?

****THINGS TO REMEMBER****

.

.

.

.

Evaluate the following expressions:

Ex: $27 \div 3^2 \cdot 2 - 3$

Ex: $20 - 4^2$

Ex: $2 \cdot 3^2 + 4$

Ex: $32 \div 2^3 + 6$

Ex: $15 + 6^2 - 4$

Ex: $7(13 - 8)$

Ex: $24 - (3^2 + 1)$

Ex: $2[30 - (8 + 13)]$

Ex: $6 + 12 \div 3 \cdot 4^2$

Ex: $24 \div (4 - 1)$

Ex: $48 - (6 + 5^2)$

Ex: $3[32 \div (2 + 6)]$

Ex: What is the answer to: $\frac{8+4}{5-2}$?

Can you rewrite that same expression using ÷ for division rather than a fraction bar and get the same answer?

<u>Evaluate the expression</u>:

Ex: $\frac{\mathbf{9}x}{\mathbf{3}(x+\mathbf{2})}$ when $x = 4$

Ex: $y^2 - 3$ when $y = 8$

Ex: $12 - y - 1$ when $y = 8$

Ex: $\frac{\mathbf{10}y+\mathbf{1}}{y+\mathbf{1}}$ when $y = 8$

Ex: $\frac{10x}{2(x+2)}$ when $x = 3$

Ex: John had 4 copies of a science report made to give his lab partners. In each copy there were 20 black-and-white pages and 5 color pages. He paid a copy center to make of a color page and *b* is the cost of a black-and-white page. What is the total cost for John and bind the copies? His cost, in dollars, is given by the expression **4(5*c* + 20*b*)** where *c* is the cost if a color page costs $2 and a black-and-white page costs $0.05?

How much did each report cost? How do you know?