

FSAP
Order of Operations

Name: _____

1. Evaluate the following expressions.

(a) $3(4)^2$

(e) $-2 + 4 - 5 - 6$

(b) -4^2

(f) $2(3 - 4)^2 + 3(2 - 3)^3$

(c) $(-3)^2$

(g) $-2(5)(6 - 6)$

(d) $3 - 4(2)$

(h) $\frac{3 - 4}{2} + 2 \cdot \frac{4 - 3}{3}$

2. Explain using numbers for a and b why $(a + b)^2 \neq a^2 + b^2$.

3. Explain the difference between -3^2 and $(-3)^2$. Why do you think some people think they are the same?

4. PEMDAS arose as a way to shorten how we express certain algebraic expressions. If we didn't have PEMDAS insert all the parentheses necessary to make sense of what order to evaluate the following:

$$4 \cdot 3^5 + 3 \cdot 2^4 - 3 \cdot 5^2 - \frac{2}{3} \cdot 7^2$$