

**Lesson #3 B: Using Order of Operations to Simplify Algebraic Expressions and Combining Like Terms**  
(Reference: Lesson #4, #7, #9 & #16 in book)**Problem**

1. **Simplify and Evaluate the Algebraic Expressions given the values of the specific variables.**

1.  $2x + 3y - xy$  when  $x = 2$  and  $y = 5$ .

2.  $2(a+z)^3 - z^2$  when  $a = 3$  and  $z = 2$ .

3.  $3(z-y)^2 + 4y^3$  when  $y = 2$  and  $z = 4$ .

4.  $\frac{x^2 + 1}{4x + 5y}$  when  $x = 2$  and  $y = 1$ .

5.  $\frac{3x + y^2}{2x + 3y}$  when  $x = 1$  and  $y = 5$ .

6.  $(-x + a) - (x - a)$  when  $x = 14$  and  $a = -8$ .

7.  $-a[-a(p - a)]$  when  $a = 5$  and  $p = 7$ .

8.  $\frac{x(4ap)}{xp}$  when  $a = 1$ ,  $p = 5$ , and  $x = -3$

9.  $2\left(\frac{a}{5-b}\right)^2$  when  $a = 3$  and  $b = -1$ .

10.  $x(x+2y) - x$  when  $x = \frac{1}{3}$  and  $y = \frac{1}{2}$ .

11. **Evaluate and Compare the Algebraic Expressions with the given values for the specific variables and use  $<$ ,  $>$ , or  $=$  to create a true numeric expression.**

11.  $3a^2 + 2b - 4b^3 \bigcirc 2a^2b^2$  when  $a = 4$  and  $b = 3$ .

12.  $4b^3 - 3c + 2b^2 \bigcirc 3b^2c^3$  when  $b = 5$  and  $c = 2$ .

13.  $(6x^2 + y^3) - 3x^6 \bigcirc 8x^4 - y^3$  when  $x = 2$  and  $y = 5$ .

14.  $ax[-a(a-x)] \bigcirc -x[-x(x-a) - (a-x)]$  when  $a = 2$  and  $x = -1$ .

15. Simplify each of the following Algebraic Expressions by combining like terms when possible.

15.  $7m - (-8m) + 9m$

16.  $-2xy - 3x + 4 - 4xy - 2x$

17.  $5n^3 + nx^2 - 2n^3 - 4nx^2$

18.  $3k^2 + kx^4 - 2k^2 + 2kx^4 + 4k^2$

19.  $2x^2y^3 + xy - 8y^3x^2 - 5yx$

20.  $x^2y - 3yx + 2yx^2 - 2xy + yx$

21.  $-3xyz^3 + 6xy^2 + 5y^2z^2 - 4xy^2 + 7xyz^3 - 2yz$

22.  $8ab^3 - 7ac + 9a^2bc^3 - 6ab^3 - 3a^2bc^3 + 7ac$