EVALUATING EXPRESSIONS NOTES

In an algebraic expression, letters, better known as variables, can stand for numbers. Here are the steps for evaluating an expression:

1. **Replace each letter in the expression with the assigned value.**
First, replace each letter in the expression with the value that has been assigned to it. To make your calculations clear and avoid mistakes, always enclose the numbers you're substituting inside parentheses. The value that's given to a variable stays the same throughout the entire problem, even if the letter occurs more than once in the expression.

[However, since variables "vary", the value assigned to a particular variable can change from problem to problem, just not within a single problem.]

1. **Perform the operations in the expression using the correct order of operations.**
Once you've substituted the value for the letter, do the operations to find the value of the expression. Don't forget to use the correct order of operations(PEMDAS): first, do what is in parentheses, next do any operations involving exponents, then do multiplication and division, and finally do addition and subtraction!

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| **Evaluate:2x3 – x2 + yfor x = 3, y = –2** | Make sure the equation is clear and you know which variable is which. It's a good idea to write the expression down and what each variable is. Leave yourself enough room to work out the problem line by line, with each step right below the previous one.  |
| **2(3)3 – (3)2 + (-2)** | Replace each variable in the expression with its value. In this example, this means each x becomes a 3 and each y becomes a -2. It's a good idea to use parentheses to keep track of this. **Tip: Be extra careful with negative numbers!** |
| **2(27) - 9 + (-2)** | Perform operations with exponents. |
| **54 - 9 +(-2)** | Perform operations with multiplication and division. |
| **43**  | Perform operations with addition and subtraction |

Here's an example. Let's evaluate the expression **2x3 – x2 + y** for **x = 3** and **y = –2**.