**Notes - Writing and Simplifying Expressions**

**Key Vocabulary**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:** A mathematical phrase that can include numbers, variables, and operation symbols (ex. 3y + 7)

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:** A number that is multiplied by a variable (ex. **5**x)

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_:** A value that does not change (ex. 4)

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:** For every real number a, b, and c: a(b + c) = ab + ac and a(b-c) = ab – ac (ex. 4(x + 3) = 4x + 12)

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:** Expressions that have the same value for all variables

**\_\_\_\_\_\_\_\_\_\_\_\_\_:** Positive and negative whole numbers (ex. 22, -3)

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:** Have identical variables; that is, they have the same variable to the same exponent. Constants are like terms as well. (ex. 6x2 and 99x2 are like terms)

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:**  Parenthesis, Exponents, Multiplying and Dividing (left to right), Adding and Subtracting (left to right) **PEMDAS!**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:** To write an expression in simplest form (combine all like terms)

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:** To replace a letter with a number or algebraic expression

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:** “parts” in an expression that are added or subtracted (ex. 4x2 + 3 -> 4x2 and 3 are terms)

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_:** a letter that represents an unknown number

**Writing Expressions**

**What are some key words that represent the following operations?**

**Addition**

**Division**

**Subtraction**

**Tips to remember**

**Multiplication**

**Writing Expressions**

**Write the following expressions in algebraic form.**

|  |  |
| --- | --- |
| 1. 9 more than c | 2. b minus 4 |
| 3. the quotient of z and 9 | 4. the total of n and 40 |
| 5. the sum of 8 and m | 6. x divided by 5 |
| 7. the difference of h and 7 | 8. 23 less than p |
| 9. the product of g and 2 | 10. 77 plus twice v |
| 11. two times r increased by 12 | 12. 3 times j decreased by 12 |

**Simplifying Expressions**

**Steps to Simplifying an Expression:**

1. **Distribute to get rid of any parentheses**
2. **Combine like terms……(like terms have the same Variable and same degree/exponent)**
3. **Always leave simplified expression in standard form with the exponents decreasing from left to right**

**Simplify the following expressions:**

|  |  |
| --- | --- |
| 1. 3(4x – 5) | 2. -4(x – 2) |
| 3. –(7y – 4) | 4. 2(b-3) + 4(2b + 2) |
| 5. -5(-8g – 3) – (5g + 3) | 6. 4(2a + b) – 3(3a – 4b) |

Review: Evaluating Expressions with Integers

*Evaluate each expression if a = 8, b = -4, and c = -2.*

|  |  |  |
| --- | --- | --- |
| 7. 3(b - a) – c | 8. 4b + a | 9. cb – a |
| 10.  - c | 11.  - b | 12. c2 |

**Try some with your partner ☺**

**Independent Practice**