

SUMMER



Rising Algebra Students
Frost Middle School

Order of Operations

Follow **GEMDAS** when simplifying numerical expressions.

G: Grouping (Parentheses, Brackets, Absolute Value, Square Roots)

E: Exponents

MD: Multiply or Divide, whichever comes first

AS: Add or Subtract, whichever comes first

1.) $2^4 - 3(3^2 - 8)$

2.) $(4^2 + 10)4 - 10(5^2 - 20)$

3.) $4^2 - 4(5^2 - 32 \div 8 \cdot 4)$

4.) $(8 \cdot 5 \div 10 + 2)(2^5 - 8^2 \div 2)$

5.) $5^2 - 3|-6 + 2|$

6.) $4^3 + (-10)(30 - 8 \cdot 5)$

7.) $15 - 3(4^2 - 10) + \sqrt{12 \cdot 3}$

8.) $\frac{48 - 24 \div 2^3}{3 + 2 \cdot 6}$

Evaluating Expressions

To evaluate an expression, first replace the variable by the given value. Then, simplify the resulting numerical expression. Always use Order of Operations!

Evaluate each expression if $x = -2$ and $y = 5$.

1.) $2x + 3y^2$

2.) $x^2 + y^3$

3.) $2y - 4x \div 8$

4.) $-2(y - 2x)$

5.) $\frac{3x-y}{11}$

6.) $\frac{xy}{3-y}$

7.) $5(6x + y)^2$

8.) $\sqrt{-8x} + y^3$

Combining Like Terms

Simplify each expression. You may only combine terms that have the exact same variable or constants.

1.) $x - 10 + 9x - 3$

2.) $12x - 8 - 12$

3.) $-2x + 11 + 6x$

4.) $3 - x - 10x + 4$

5.) $12x^2 + 5 + 3x - 5$

6.) $4x - 2 - 3x$

7.) $-3x - 9 + 15x - 12$

8.) $x^2 - 4 + 4x - 6x^2$

Solving Two-Step Equations

Use inverse operations to get the variable alone. Remember, what you do to one side, you must do to the other.

1.) $\frac{x}{10} + 4 = 5$

2.) $3x - 2 = -29$

3.) $1 - x = -5$

4.) $5 - \frac{x}{2} = 3$

5.) $\frac{x-10}{2} = -7$

6.) $-9 + \frac{x}{4} = -2$

7.) $4x - 9 = -9$

8.) $-5 + 3x = -1$

Solving and Graphing One-Step Inequalities

Use inverse operations to get the variable alone. If you multiply or divide by a negative, flip the sign! Before graphing, make sure your variable is on the left.

Use an open circle for $<$ or $>$ and a closed circle for \leq or \geq .

1.) $-1 + x \geq 4$

2.) $-12 > x - 7$



3.) $x - 6 \leq -14$

4.) $-3x > 3$



5.) $\frac{x}{4} < -4$

6.) $-90 \geq -9x$

