BEDMAS
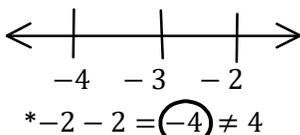**Integers (side by side and $\times$ & $\div$)**
Same Plus: Two signs side by side that are the SAME equal a POSITIVE number.
$$-(-4) = +4 \qquad -4 \times -4 = +16$$

Different Minus: Two signs side by side that are DIFFERENT equal a NEGATIVE number.
$$+(-4) = -4 \qquad +4 \times -4 = -16$$

Adding Subtracting: Number-line

$-4 \quad -3 \quad -2$
$$*-2 - 2 = \boxed{-4} \neq 4$$

Expressions/Equations:
1) Signs 2) Numbers 3) Letters
Golden Rule: Do to the Left/Do to the Right
Opposite Operation to Both Sides (SAMDEB)
Adding/Subtracting Both Sides
Multiplying/Dividing Both Sides
Distribution/Combine Like Terms
Square Root/Square Both Sides
Expressions/Equations 1 or 2 Variable/s
LCD: Multiply by the Top/Bottom/Both Sides
Do to one Do to all ($\times$ & $\div$)
Add/Subtract Multiply/Divide by "x"
Rearrange Order of Terms/Mirror Equation
Isolate a Variable

$2(x+4)$
$2x + 8$

Substitution: **(Substitution)**
$x = 2 \quad 3x = ?$
$\quad 3(2) = 6$
Put 2 in for x with brackets!

Words Probs
Diagram
Let Statements
Equation/s
(Arbitrary#'s)
Isolate
Substitute
Solve (Algebra)
Substitute
Solve
Answer!
Check Answer!
(Eliminate)
$\# \neq \#$
$No\ sol'n$
$\# = \#$
$Infinite\ Sol'ns$

Equal Fractions/Ratios
Do to Top/Do to Bottom
Do to Left/Do to Right
Direction Matters!
MultiplyTops/MultiplyBottoms(Left/Right)
Flip and Multiply
LCD: Lowest Common Denominator
Mixed/Improper

$$Over = Over$$
$$\frac{\square}{\square} = \frac{\square}{\square}$$

$\#:\#$
$\#:\#$

Scale/Similar Triangles
Multiply/divide by the scale factor
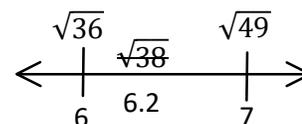$$Scale\ Factor = \frac{Larger\ \#}{Smaller\ \#}$$

LCM $\quad$ 8 and 12 = 24

GCF $\quad$ 8 and 12 = 4

TOV

Square Roots
$$\sqrt{4} = \sqrt{2 \times 2} = 2$$

Estimating Square/s/Roots

$\sqrt{36} \qquad \sqrt{49}$
$\sqrt{38}$

$6 \quad 6.2 \quad 7$

Graphing: Table of Values TOV
$x - intercept: y = 0, put\ 0\ in\ for\ y\ and\ solve. (x, 0)$
$y - intercept: x = 0, put\ 0\ in\ for\ x\ and\ solve. (0, y)$

Percentages/Fractions/Decimals:

$$\frac{IS}{OF} = \frac{\%}{100}$$

$$\frac{Part}{Total} = Decimal$$

$$Part = Decimal \times Total$$

Cross Multiply
$$\frac{a}{b} = c$$
$$a = cb$$

$Decimal \times 100 = \%$ $\qquad$ (decimal two to right)
$\qquad Decimal = \% \div 100$ $\qquad$ (decimal two to left)

Multiply by the decimal, Then Add

Multiply by the % you want to be!
$$Multiplier = 1 \pm r$$
$$Initial \times Multiplier = Final$$

Long Division
Bottom ⟌ Top

1%

$$\%Change = \frac{Final - Initial}{Initial}$$

Geometry
$A = lw$
$$A = \frac{bh}{2}$$
$A = \pi r^2$
$C = 2\pi r$
$c^2 = a^2 + b^2 \quad$ Pythagoras
$$\frac{a}{b} = \frac{c}{d} \quad$$ Similar Shapes
Perimeter, Area, Volume
Net SA: Lay Shape Flat
$\qquad (Prisms)$
$V = A_{base} \times h, \quad (Base\ must\ be\ same\ as\ Top)$
$$V = \frac{1}{3} A_{base} \times h \ (Pyramid\ and\ Cone^*)$$
$$SA^* = \pi r^2 + \pi rs$$
$$V = \frac{4}{3} \pi r^3 \quad (Sphere)$$
$SA = 4\pi r^2$

Probability/Odds in Favour : Odds Against
$$Probability = \frac{\#\ of\ favorable\ outcomes}{total\ outcomes}$$
Methods: $\times$/Table/Tree ($\times$ Branches + Leaves)