The 8th Grade EOG test is designed to measure how much you have learned over the course of the year.

The test is Multiple Choice and Gridded Answers that requires you to supply an answer to the problem.

**Don’t be fooled that Multiple Choice Questions are easy!** Many of the questions usually require you apply some other “unstated” prior knowledge or convert units or re-write a formula before you can just enter numbers from the problem. Sometimes they give you more information than you need to solve the problem.

**BE CAREFUL TO READ the problem to make sure you know what they are asking.**

**Read the problem carefully and look for key words and units. Look at the answers.**

You might solve a problem for one value or variable, but they are looking for something else!

Draw a picture, graph, number line or “Model” for the problem. Make a Data Table. Watch the units for rates and interest, and percent (Months, Years, Feet, Inches, Yards). **ALWAYS WRITE THE “BASIC” FORMULA**.

Once you have the formula down, label what you know from the problem.

Substitute in. **LOOK** at the answers for obvious choices to eliminate:

**On SALE** is less than original. Positive and Negative Answers. **Tax and Tip** cannot be more than the cost of the item.

Slope (+/-) of a line, etc. Left Arm (-) Right Arm (+) Both Arms: Flat Vertical lines are UNDEFINED!

There are many ways to solve a problem; you need to have an “APPROACH” or “Method”. **WORK SMART.**

Problems won’t solve themselves by you looking at them. YOU NEED TO DO THE WORK**! WRITE IT DOWN.**

**KEY THINGS TO REMEMBER:**

 Solving Equations and Inequalities. Order of Operations: D-C-M-A-M, P-E-M-D-A-S

RULES of Signed Numbers: Multiply and Divide (Like Signs: **+** Positive; Un-like Signs: **-** Negative)

 Add and Subtract: LIKE Signs: Negative - Negative = (Bigger Negative)

 Positive **+** Positive = (Bigger Positive)

 UNLIKE: “Subtract” ***Find the Difference*** and take the sign of the Larger Value.

 There is no such thing as Subtraction: It is Addition in the Opposite Direction.

 Draw a number line: Negative to the Left, ZERO, and Positive to the Right.

 Fraction, Decimal, Percent Equivalent: $\frac{1}{4}= .25=25\%, \frac{1}{3}= .3333=33\frac{1}{3}\%$, ETC. **Smallest to Greatest!**

 Rules of Exponents: Multiply (ADD), DIVIDE (Subtract), PowerPower (Multiply). $\left(4^{3}\right)^{3}= $ 262,144 or 64^3

Never have a negative Exponent: 4-2 = $\frac{1}{4^{2}}$. Negative exponent means flip it. $\frac{1}{3^{-2}}=$ 32. $\frac{3}{2^{-2}}=3\* 2^{2}$

 Rules of Radicals$ √$, Squares, Square Roots, Perfect Squares. $ \sqrt{2} \~ 1.414$. $\sqrt{10} \~ 3.16$. Estimate and Factor.

Parallel Lines: Vertical Angles, Interior Angles, Alternate Interior, Corresponding. Alternate Exterior, Supplementary, Complementary, Adjacent, Vertex

 How to calculate slopes of lines, X and Y Intercepts: Slope = m = $\frac{Rise}{Run}= \frac{Δy}{Δx}= \frac{y\_{2}- y\_{1}}{x\_{2}- x\_{1}}$

Perpendicular (negative reciprocal) and Parallel Slopes (same slope).

 Equations of Lines: Ax + By = C (Standard Form) Slope = $\frac{-A}{B}$-, b = $\frac{C}{B}$ SOLVE FOR: X = 0 and Y =0

and y = mx + b (Slope Intercept). Y = b when x = 0! MAKE A DATA TABLE.

 Basic RATE Problems: AMOUNT = RATE \* TIME. Commission problems; Amount = Rate \* Price.

 ***AMOUNT*** could be “Distance”, “Flow of water”, Commission, etc.

 Basic **PERCENT OF** problems: Tax, Tip, Discount, % OFF. RATIO: PART / WHOLE = % / 100

 Remember: if something is **15% OFF,** it is on sale for 85% **of** the Original. **P - .15P = .85P**

 When converting **Percent to Decimal**, you need to move the **Decimal 2 Places**: 7.5% = .075. 8% = .08

 When Dividing Fractions: Multiply by the Reciprocal: **KFC**: $\frac{6}{7} ÷ \frac{3}{14} = \frac{6}{7} ×\frac{14}{3}=Reduce First: Answer is 4.$

 Area and Volume of 3D Prisms and Solids: Cones, Cylinders, Cubes, Pyramids, Spheres.

 Factoring and expansion of Polynomials: (F.O.I.L.) or Matrix: QUADRATIC EQUATION. A2 – B2, Ax2 + Bx + C

Pythagorean Theorem: A2 + B2 = C2: **Triples: 3, 4, 5:** **c =** $\sqrt{a^{2}+b^{2}}$ **a =** $\sqrt{c^{2}-b^{2}}$ **b =** $\sqrt{c^{2}-a^{2}}$

 Other Triplets: **6, 8, 10** (and multiples of 3, 4, 5) **1, 12, 13 LONG Diagonal** of a Box.