Gellerisms on SAT Mathematics

- **MATH IS JUST ANOTHER LANGUAGE.** The PSAT/SAT math problems will be presented in English language, math language and diagrammatic language. The ability to translate is paramount; let the problems talk to you.

- **YOU CAN’T WRITE THE ESSAY IF YOU DON’T KNOW THE ESSAY QUESTION.** If a problem begins with the word “if,” always look past the comma first to determine exactly what the problem is asking.

- Use a calculator during ALL practice sessions if it increases your comfort level.

- An important part of problem solving is to be neat and disciplined as you work.

- Through PRACTICE you will learn what “they’re” testing and thus be able to move more quickly through the math sections.

- On the PSAT/SAT there are ten student-produced response questions. Therefore you must be comfortable solving many problems algebraically from start to finish rather than relying on the answer choices as a crutch for your problem solving.

- On the PSAT/SAT, math problems are presented mostly in order of difficulty as determined through field testing. BE HALF-PARANOID and SLOW DOWN while working on the last third of a math section; traps must lurk there because most students missed those problems.

- Underline adjectives in math problems, i.e. “positive,” “different,” “least,” etc. They mean a lot toward solving a problem.

- “Integer” is the most frequently appearing word on the PSAT/SAT. THE INTEGERS ARE THE COUNTING NUMBERS, THEIR OPPOSITES AND ZERO. A casual definition: the numbers you would use to label a number line. Learn and understand the definition!!!!
There are five ways to combine equations: substitution and SMOOSHING using the addition, subtraction, multiplication and division properties of equality.

The words “must be” in a problem signal that you must think of all possibilities before bubbling in an answer choice. “Could be” signals thinking of just one possibility. Be careful.

Always SIMPLIFY BEFORE YOU SUBSTITUTE! Using the properties of equalities, fractions and proportions, make expressions and equations “easier.”

If you see the word “product” or “sum,” just relax and know that some other students mix up the two operations. “They” are just testing math vocabulary.

There are only three ideas that you need to know about prime numbers: the definition, 1 is NOT a prime number and 2 is a prime number.

If a problem speaks of “factor” (synonymous with “divisor”), identify the associated “multiple” (synonymous with “product”) and vice-versa.

GO BACK TO FOURTH GRADE and review fraction concepts. Be able to manipulate common fractions – add, subtract, multiply, divide and simplify them. GET RID OF THOSE CALCULATORS ONCE IN A WHILE!

The word “remainder” signals BIG R in a division problem, another FOURTH GRADE concept

Expect problems needing ratios and/or proportions as solution methods; they are a part of most standardized tests. In the word “RELATIONSHIP” is the word “RATIO.”

DON’T LET ANYTHING HANG; GET A 1 UNDER IT. Then you will have a proportion to which you can cross multiply. And get rid of those slanty bars; FRACTIONS HAVE TOPS AND BOTTOMS.

When confronted with rational equations, the quickest solution is to multiply all terms on both sides by the least common denominator, i.e. DROP THE BOTTOMS.
- When asked to find a percent of increase or decrease, remember the formula \( \frac{\text{DIFFERENCE}}{\text{ORIGINAL}} \).

- There are three types of average problems: finding an average; finding an average when the word “consecutive appears in the problem – do LITTLE WORK, the average is the middle number; finding a missing addend when the average is given: use \( S = NA \).

- A triangle problem often will be one of three types: if only angles are “discussed” – the sum of the degrees of the angles in the triangle equals 180°, if angles and sides are “discussed” – the side opposite the greatest angle is the longest, and if only sides are “discussed” – in length the third side has to be less than the sum of the other two sides and greater than their difference.

- Exterior angle theorem – measure of the exterior angle is equal to the sum of the two remote interior angles – has been on soooooo many tests.

- LENGTH OF ARC = PORTION OF CIRCUMFERENCE

- When no values are given, turn percent and geometry problems into REAL LIFE SITUATIONS – PLUG IN NUMBERS.

- Make your life easier if inequalities of sides are not required: use a cube if the problem speaks of a “rectangular solid” and use a square if the problem speaks of a “rectangle”.

- You’ve been brain washed: you do not always have to distribute; you do not always have to use \( \text{perimeter} \) – sometimes half the \( \text{perimeter} \) will do.

- Surface area = AREA OF THE SURFACES

- A SLANT LINE IS ALWAYS SOMEONE’S HYPOTENUSE.

- For distance rate and time problems, draw a chart and draw a picture. YOURS WILL BE BETTER THAN MINE!

- To find the number of items inclusive in a consecutive set of integers, subtract the beginning integer from the last integer and add 1. \((y - x + 1)\) To find the number of items non-inclusive in a consecutive set of integers, subtract the beginning integer from the last integer and subtract 1. \((y - x - 1)\).