# GED Tips and Topics Outline for Math Success

08/08/25

- **Tip 1: Develop YOUR toolset**:
  - Know the basic math skills (the "foundation" skills) – order of operations, signed numbers addition and subtraction, equation techniques, etc.
  - Memorize math basics (exponent rules, probability fundamentals, distributive properties, etc.)
  - Learn how to use the TI-30XS calculator
  - Learn how to apply the formulas the GED test gives you
  - Take the time to make sure you understand each question and apply your math and algebra skills accurately
- **Tip 2: Practice, practice, practice**

## *Unofficial List* of GED Math Topics

(Based on my GED math tutoring and teaching.
Might not be everything, but pretty close.)

### Topic 1: Fundamental math and algebra skills

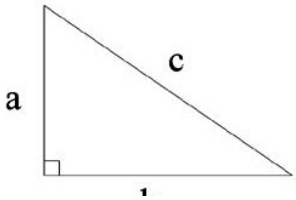
- ❑Order of operations (PEMDAS)
- ❑Signed numbers math (really important – used everywhere)
- ❑How to use a number line
- ❑Basic meaning of algebraic terms
- ❑Simplifying expressions
- ❑Exponents and roots
- ❑Evaluating expressions
- ❑How to solve basic equations

- ❑How to solve inequalities
- ❑Scientific notation
- ❑Mode, median and average (mean)
- ❑Distributive properties
- ❑Working with function tables
- ❑Proportions, ratios, fractions, percentages
- ❑How to identify different types of problems and figure out what techniques to use
- ❑How to use the TI calculator

## Topic 2: Basic Geometry, surface areas and volumes

- ❑What the different letters mean in the formulae you're provided
- ❑Solving problems in different formats
- ❑Word problems
- ❑Basic square and cubic units, plus units conversion
- ❑Pythagorean theorem for right triangles

$$a^2 + b^2 = c^2$$




**Surface Area and Volume of a:**

| | | |
|---|---|---|
| Rectangular/right prism | $SA = ph + 2B$ | $V = Bh$ |
| Cylinder | $SA = 2\pi rh + 2\pi r^2$ | $V = \pi r^2 h$ |
| Pyramid | $SA = \frac{1}{2}ps + B$ | $V = \frac{1}{3}Bh$ |
| Cone | $SA = \pi rs + \pi r^2$ | $V = \frac{1}{3}\pi r^2 h$ |
| Sphere | $SA = 4\pi r^2$ | $V = \frac{4}{3}\pi r^3$ |

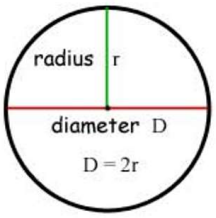
($p$ = perimeter of base $B$; **B = area of base**)

$\pi = 3.14$

**Area of a:**

| | |
|---|---|
| parallelogram | $A = bh$ |
| trapezoid | $A = \frac{1}{2}h(b_1 + b_2)$ |

The geometry of the circle




$A = \pi r^2$

$C = \pi D$

## Topic 3: Simple interest

(Students report at least one of these questions on each test version, sometimes two.)

$I = prt$

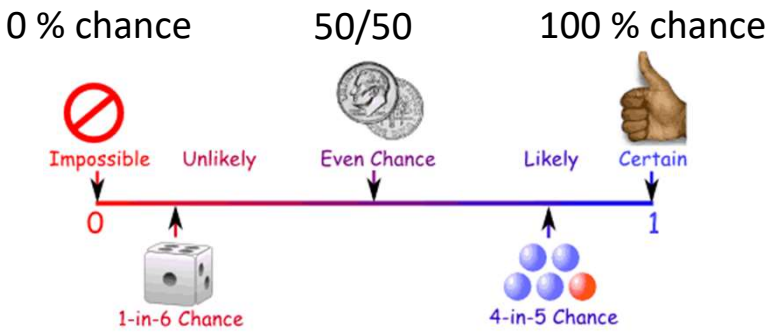
($I$ = interest, $p$ = principal, $r$ = rate, $t$ = time)

- ❑How to apply the basic equation
- ❑Different problem formats – how to carefully read (*Answer what the questions is asking*. The multiple choice options will have wrong answers, such as interest when the question asks for interest + principal. Easy to get wrong – be careful!)
- ❑Use of the rate and units of time correctly
  - The rate will be given as a percentage annual interest, but it must be converted to a decimal for use in the formula
  - The time must be expressed in years for use in the formula (you may have to convert from other units of time, such as weeks or months)

## Topic 4: Probability, Combinations and Permutations

- ❑How to recognize the correct problem type
- ❑Simple probability, independent and dependent events
- ❑Combinations and the types of problems you'll likely see on the test
- ❑Permutations with and without repetition

Learn the language of probability




- *<u>Probability</u>: how many times does something happen out of a certain number of tries (or trials). The "something" that happens is the "favorable outcome".*

❖ <u>Combinations</u>: how many ways to arrange X things out of Y total things?
*<u>Order does not matter</u>*

❖ <u>Permutations</u>: picking or doing things where <u>order matters</u>
And, there are two types or permutations: with or without repetition

## <u>Topic 5:</u> Lines and linear functions

❑How to recognize a linear equation (or linear function)
❑Different ways to calculate slope
❑How to recognize a linear function or relationship in data (such as a table)
❑Different ways to use the slope-intercept form
❑Figuring out the point at the intersection of two lines (the solution to a system of equations)
❑Filling out a function table

| | |
|---|---|
| slope of a line | $m = \frac{y_2 - y_1}{x_2 - x_1}$ |
| slope-intercept form of the equation of a line | $y = mx + b$ |
| point-slope form of the equation of a line | $y - y_1 = m(x - x_1)$ |

## Topic 6: Quadratic equations

- ❑How to recognize a quadratic equation and how to manipulate or factor a quadratic
- ❑How to apply the quadratic formula

| | |
|---|---|
| standard form of a quadratic equation | $y = ax^2 + bx + c$ |
| quadratic formula | $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ |

## Topic 7: Miscellaneous

- ❑Reading graphs
- ❑Interpreting histograms
- ❑Word problems (basic mathematical reasoning)
- ❑“Spreadsheet” problems
- ❑Distance/rate/time problems