

# Welcome to the GED® Tuesdays for Teachers Webinar

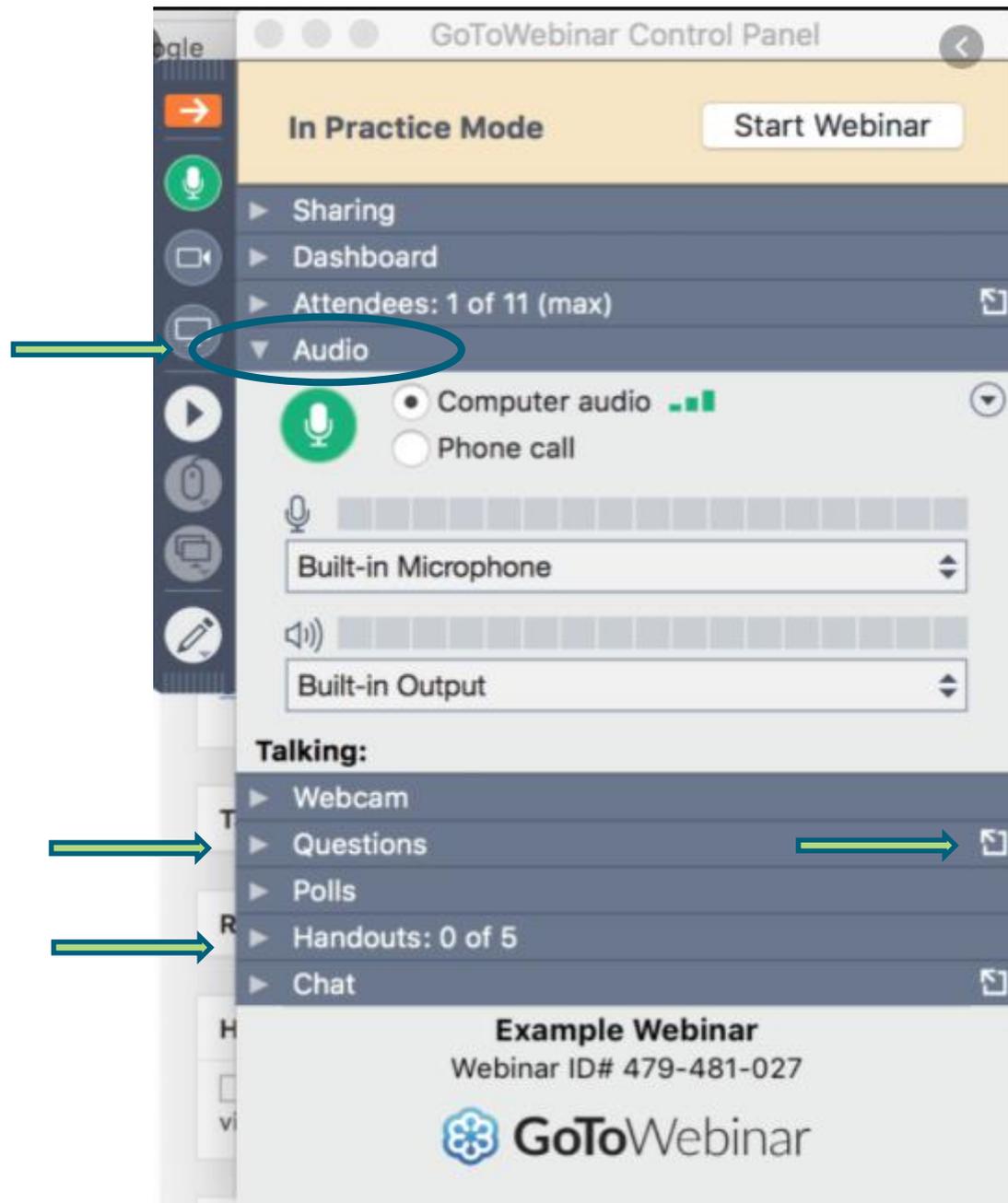
- The webinar will start at 3:30 p.m. (EDT), 2:30 p.m. (CDT).
- If you have a technical question, please type it into the question panel.
- When you log on, check your audio to make sure your headphones are working properly. If you use your phone to call in, be sure to enter the appropriate codes.
  - If you do not hear anything during your audio test, look on the dashboard. Open the “audio” tab and select the option you prefer.
- You will not hear the presenters until 3:30 p.m. when the webinar goes live.
- Check the chat box to see any messages from the presenters.
- Thank you for joining us today.

# GED Knowledge & Skill Gaps Math—Session 2

A Tuesdays for Teachers Webinar  
by the GED Testing Service®  
November 16, 2021



# Before We Get Started



# Welcome



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Senior Content  
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Susan Pittman,  
Education Consultant

# GED Knowledge & Skill Gaps Math—Part 1

**Top Resources**

-  Professional Development Training  
[View Resource](#)
-  Resources to Guide Your Instruction  
[View Resource](#)
-  Free Classroom Materials  
[View Resource](#)

## Announcements



## Webinar Trainings

Learn effective classroom strategies and techniques with our bi-monthly Tuesday development webinar series for educators.

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## Trends in Students' Knowledge and Skills Gaps – Mathematical Reasoning, Part One

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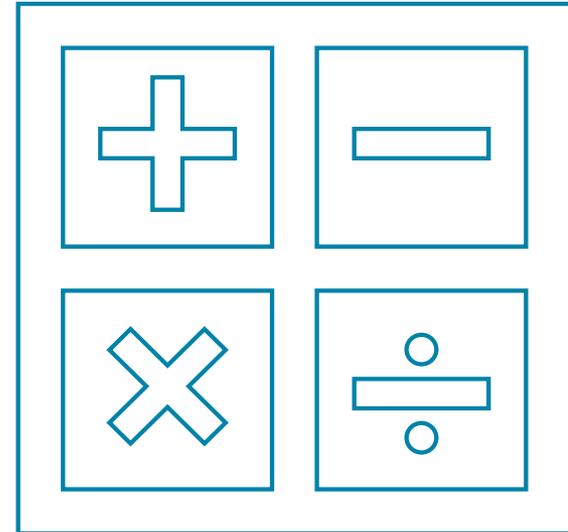
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# Today's Focus

Some test takers and students have gaps in the knowledge and skills that they need to succeed on the GED Mathematical Reasoning test. Test takers and students may need more coverage and practice in these areas during test preparation.

# What we will be covering

- How skill/knowledge gaps are identified
- Why identifying gaps in mathematics is so critical
- Specific skills and GED indicators where students and test takers have the *most* difficulty
- Possible reasons *why* students and test takers are having difficulty



# What we won't be covering

Test takers tend to perform less well on some items simply because the concepts they assess are more difficult.

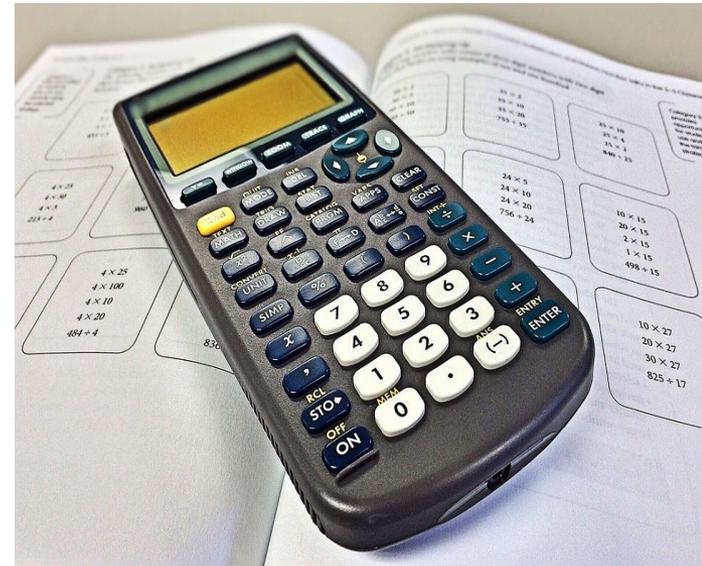
In other words, we *expect* the items to be hard because the concepts are hard (e.g., permutations and quadratic equations).

# Passed 3 of 4 Subjects: Data Summary

Over the past 2 years, GED Testing Service has tracked 77,000 test takers who have passed the test for 3 of the 4 subject areas.

Subject left to pass:

- 82% Math
- 11% RLA
- 5% Social Studies
- 2% Science



# Post-test analysis

After test items are developed and field tested, they are analyzed statistically, *and* for content issues, then are designated as:

- accepted
- rejected
- revised/re-field tested

This statistical analysis is where knowledge and skill gaps are identified.



# Areas of interest

- Session 1:
- non-calculator items
- exponents/roots
- three-dimensional shapes
- Session 2:
- (compound) probability
- algebraic computation
- inequalities
- slope/graphing
- multiple correct answers

NOTE: there is overlap between some of these areas

# Gap 4: (Compound) probability

Indicator Q.8.b

Skills:

- simple probability\*
- compound probability of sequential events or multiple categories
- compound probability with replacement
- compound probability without replacement

\*Test takers tend to do fine with simple probability

# Gap 4: (Compound) probability (examples)

## Sequential events



A coin is flipped 3 times. What is the probability that the result is 'heads' each time?

## Multiple categories

Amy flips a coin and rolls a standard die. What is the probability that the coin lands on 'heads' and the die lands on 3?

# Gap 4: (Compound) probability (examples)



## Replacement

Martin has a bag containing 20 pieces of candy. There are 4 pieces each of apple, cherry, grape, lemon, and strawberry flavors. Martin randomly selects a piece of candy from the bag, puts it back, then randomly selects another. What is the probability that Martin selects a lemon, then a strawberry candy?

## Gap 4: (Compound) probability (examples)

### No replacement

A fish tank at the aquarium store contains 5 male and 5 female goldfish. An employee is moving the goldfish to another tank one at a time. What is the probability that the first two goldfish removed are male?

# Gap 5: Algebraic computation

## Indicators:

- A.1.a (factoring, computing w/linear expressions)
- A.1.d (computing w/polynomials)
- A.1.f (factoring polynomials)

## Skills:

- add/subtract
- multiply/divide
- multiple operations
- factor (Greatest Common Factor, trinomials)

# Gap 5: Algebraic computation (types)

Linear expressions:

one or two variables

not multiplied together

no exponents

Ex:  $4x + 8y - 8$

Polynomials

no limit on number of variables

may have exponents

variables may be multiplied together

Ex:  $4x^2 + 8y^3 - 8x^2y$

Ex:  $4x + 8y - 8z$

# Gap 5: Algebraic computation (examples)

## Linear expressions

Subtract  $(2n - 3) - (6n - 8)$

(A.1.a)

Multiply  $(5x - 3y)(2x + y)$

(A.1.a)

Simplify  $2(3x - y) - (x + 4y)$

(A.1.a)

Factor  $6x + 10y$

(A.1.a)

# Gap 5: Algebraic computation (examples)

## Polynomials

Subtract  $(2x^2 - 3y^2) - (6x^2 - 8y)$

(A.1.d)

Multiply  $-5x^2y^3(2x^2 + xy^2 - 2x^2y^2)$

(A.1.d)

Factor  $6x^3y^2 + 10xy^4$

(A.1.f)

Factor  $3x^2 - 8x - 35$

(A.1.f)

# Gap 6: Inequalities

Test takers do well on items assessing equations (A.2), but less so on items assessing inequalities (A.3.a – A.3.d), even though nearly all the concepts are practically identical:

- solving equations and inequalities algebraically
- using algebraic reasoning to solve contextual problems
- writing equations and inequalities

The largest difference—graphing inequalities vs equations (number line vs coordinate graph)

# Gap 6: Inequalities

Differences between equations and inequalities:

- understanding the meaning of inequality (not *specifically* assessed, but used in writing inequalities and in algebraic reasoning)
- knowing/understanding the vocabulary of inequality (less than, more than, etc.)
- knowing when to switch direction of the inequality symbol when solving inequalities
- Identifying the graph of a one-variable inequality

## Gap 6: Inequalities (examples)

Solve the inequality for  $x$ :  $-4x + 12 < -8$

(A.3.a)

Which number line represents the solution to the inequality  $-4x + 14 < 2x - 10$ ?

(A.3.b)

## Gap 6: Inequalities (examples)

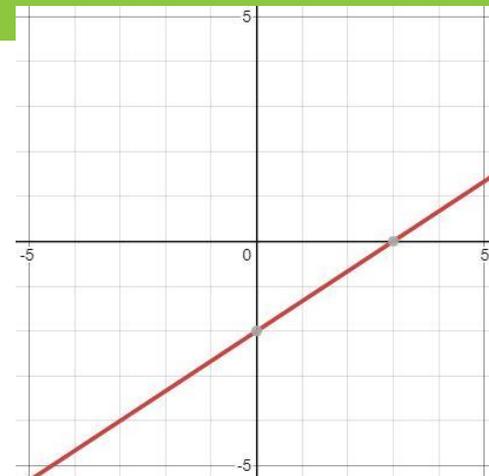
Sarah has a budget of \$500 to buy team jerseys. The vendor charges a fee of \$100 and \$30 per jersey. How many jerseys can Sarah buy?

(A.3.c)

Sarah has a budget of \$500 to buy team jerseys. The vendor charges a fee of \$100 and \$30 per jersey. Which inequality can be used to determine how many jerseys,  $x$ , Sarah can buy?

(A.3.d)

# Gap 7: Slope/graphing



## Indicators:

- A.5.b (calculate slope from a table, graph or equation)
- A.5.d (graph a two-variable equation)

## Related indicators:

- A.5.b (unit rate as slope)
- A.6.a – A.6.c\* (writing equations from points and/or slope; working with parallel and perpendicular slopes)

\*difficult indicators, but still an ‘area of interest’

## Gap 7: Slope/graphing (examples)

The table contains the coordinates of several points on a line. What is the slope of the line represented by the table?

| $x$ | $y$ |
|-----|-----|
| 1   | -9  |
| 3   | -6  |
| 5   | -3  |

(A.5.b)

## Gap 7: Slope/graphing (examples)

What is the slope of the equation  $3x - 9y = 2$ ?

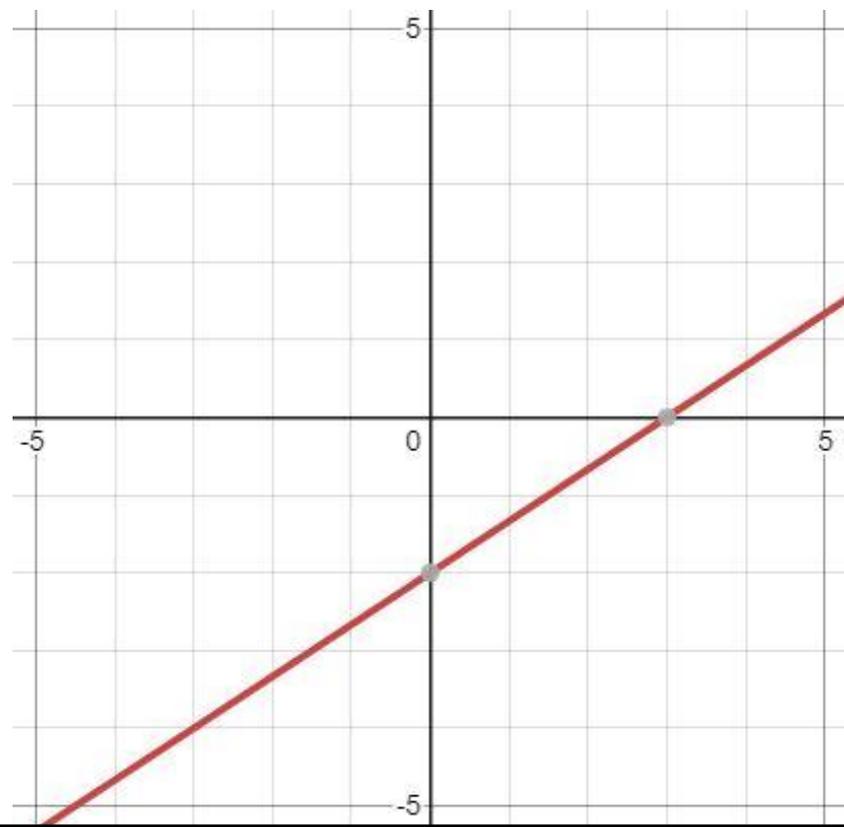
(A.5.b)

Which graph represents the equation  $8x - 3y = 24$ ?

(A.5.d)

Which graph represents the equation  $y = 3x - 4$ ?

(A.5.d)



## Gap 8: Multiple correct answers

Most items on the GED Mathematical Reasoning test are multiple-choice (MC) and have only one correct answer. But the test also contains technology-enhanced (TE) items, including fill-in-the-blank, drag-and-drop, hot spot, and dropdown formats.

Like MC items, most TE items have only *one* correct answer. However, a TE item *may* have more than one correct answer. Some forms will have no items of this type; others will have one or two.

## Gap 8: Multiple correct answers (item characteristics)

Two types:

- More than one correct answer is possible, but test takers are asked to select *only* one
- Test takers are asked to select *all* correct answers

Items with multiple correct answers may assess any indicator that supports the format—not all them do.

# Gap 8: Multiple correct answers (examples)

Click on a pair of values that could be removed from the table so that it represents a function.

| $x$ | $y$ |
|-----|-----|
| 1   | 5   |
| 0   | -2  |
| 4   | 0   |
| 1   | -8  |
| -3  | -3  |

(A.7.b)

# Gap 8: Multiple correct answers (examples)

The pairs of numbers represent the slopes of lines on a coordinate grid. Click on the pair or pairs that represent perpendicular slopes.

0 and 1

$\frac{1}{3}$  and -3

-1 and 1

$-\frac{1}{2}$  and -2

(A.6.c)

**Is the GED Math Test Getting Harder?**

**Why are My Students Passing the GED Math Ready test, but not the GED Math test?**

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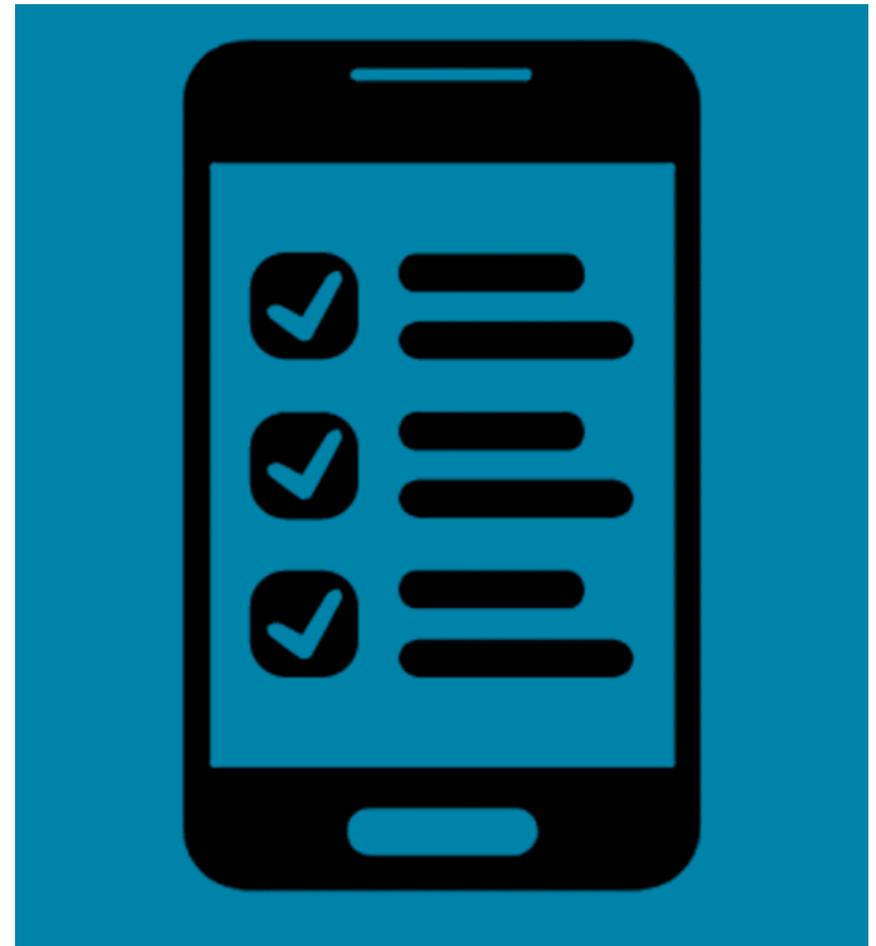
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# Resources on GED.com

- Computer Tutorial
- Calculator Tutorial
- Calculator Reference Sheet
- Formula Sheet
- Math Study Guide
- Calculator-Prohibited Indicators



# Computer Tutorial

Tutorial - Candidate Name



Welcome to the GED® Test Tutorial

To begin, look at the lower right corner of the screen.

*Click the Next button.*



Navigator Next →

Tutorial - Candidate Name

Instructions and Practice Activities for  
the *Tutorial*

There are 5 sections in this tutorial.



- Section 1 - Tutorial Overview
- Section 2 - Question Types
- Section 3 - Editing Tools
- Section 4 - Mathematics Resources
- Section 5 - Test-Tracking Tools

*Click Next to begin.*

← Previous Navigator Next →

# Calculator

[https://ged.com/wp-content/uploads/calculator\\_sheet.pdf](https://ged.com/wp-content/uploads/calculator_sheet.pdf)

Calculator Tutorial

Calculator



Welcome to the GED® Test Calculator Tutorial

To begin, look at the lower right corner of the screen.

*Click the Next button.*



<https://ged.com/practice-test/en/calculator/>

Available in English and Spanish

2014 GED® Test Resources



### TI-30XS Calculator Reference Sheet

The calculator reference sheet is provided on most items on the 2014 GED® Mathematical Reasoning Mathematical Reasoning test, as well as certain items on the Scientific Reasoning and Social Studies tests. The calculator reference sheet is provided to test-takers in order to demonstrate the functionality of the onscreen calculator, specifically in terms of what order to click the buttons in complex problems, such as order of operations or calculating with fractions.

**BASIC ARITHMETIC**

To perform basic arithmetic, enter numbers and operation symbols using the standard order of operations.

**EXAMPLE**

$$8 \times -4 + 7 =$$


The correct answer = **-25**

**PERCENTAGES**

To calculate with percentages, enter the number, then

**EXAMPLE**

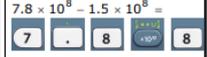
$$40\% \times 560 =$$


The correct answer = **224**

**SCIENTIFIC NOTATION**

To perform calculations with scientific notation, use the  key.

**EXAMPLE**

$$7.8 \times 10^8 - 1.5 \times 10^8 =$$


**FRACTIONS**

To perform calculations with fractions formatted in reduced form.

**EXAMPLE**

$$\frac{2}{5} \times \frac{3}{7} =$$


**MIXED NUMBERS**

To perform calculations with mixed numbers, use  . As with fractions, the answer will automatically be formatted in reduced form.

**EXAMPLE**

$$12\frac{5}{6} - 1\frac{1}{2} =$$


The correct answer =  **$\frac{34}{3}$**

To perform calculations with powers and roots, you will use the following keys:

**EXAMPLE**

$$1.2^2 =$$


The correct answer = **1.44**

**POWERS AND ROOTS**

**EXAMPLE**

$$7^4 =$$


The correct answer = **2401**

**EXAMPLE**

$$\sqrt{529} =$$


The correct answer = **23**

**EXAMPLE**

$$\sqrt[3]{1728} =$$


The correct answer = **12**

**TOGGLE KEY**

The answer toggle key  can be used to toggle the display result between fraction and decimal answers, exact square root and decimal, and exact pi and decimal.

**EXAMPLE**

$$\frac{9}{10} =$$


The correct answer = **0.9**

# Formulas

[https://ged.com/wp-content/uploads/math\\_formula\\_sheet.pdf](https://ged.com/wp-content/uploads/math_formula_sheet.pdf)

Available in English and Spanish

## Mathematics Formula Sheet & Explanation

The 2014 GED® Mathematical Reasoning test contains a formula sheet, which displays formulas relating to geometric measurement and certain algebra concepts. Formulas are provided to test-takers so that they may focus on *application*, rather than the *memorization*, of formulas.

### Area of a:

|               |                               |
|---------------|-------------------------------|
| square        | $A = s^2$                     |
| rectangle     | $A = lw$                      |
| parallelogram | $A = bh$                      |
| triangle      | $A = \frac{1}{2}bh$           |
| trapezoid     | $A = \frac{1}{2}h(b_1 + b_2)$ |
| circle        | $A = \pi r^2$                 |

### Perimeter of a:

|                           |  |
|---------------------------|--|
| square                    | $P = 4s$                                   |
| rectangle                 | $P = 2l + 2w$                              |
| triangle                  | $P = s_1 + s_2 + s_3$                      |
| Circumference of a circle | $C = 2\pi r$ OR $C = \pi d$ ; $\pi = 3.14$ |

### Surface area and volume of a:

|                   |                           |                            |
|-------------------|---------------------------|----------------------------|
| rectangular prism | $SA = 2lw + 2lh + 2wh$    | $V = lwh$                  |
| 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 with area  $B$ ;  $\pi = 3.14$ )

### Data

|        |   |
|--------|---|
| mean   | mean is equal to the total of the values of a data set, divided by the number of elements in the data set   |
| median | median is the middle value in an odd number of ordered values of a data set, or the mean of the two middle values in an even number of ordered values in a data set |

### Algebra

|  |   |
|--|---|
| 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     | $y - y_1 = m(x - x_1)$  |
| standard form of a quadratic equation          | $y = ax^2 + bx + c$   |
| quadratic formula                              | $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$                                |
| Pythagorean theorem                            | $a^2 + b^2 = c^2$   |
| simple interest                                | $I = Prt$<br>( $I$ = interest, $P$ = principal, $r$ = rate, $t$ = time) |
| distance formula                               | $d = rt$  |
| total cost                                     | total cost = (number of units) $\times$ (price per unit)                |

# Math Study Guide

1/24/2018 MyGED® : Study Guide

**x+y<sup>2</sup>** GED Study Guide  
MATH

### What you need to know about the GED® Math Test

- 1** You should be familiar with arithmetic and math concepts, measurements, equations, and applying math concepts to solve real-life problems. Remember, the math test is not a memorization test! You'll have access to a formula sheet that gives you information like how to calculate the area for different shapes.
- 2** This study guide and the example questions in it will help you get an idea of what's going to be on the test.
- 3** You **don't** need to know everything in this guide! If you want to see how close you are to passing, the GED Ready® official practice test is a great way to help you determine if you're ready.

### Test Overview

**Topics**  
Rational Numbers  
Shapes and Measurement  
Graphs and Functions  
Expressions and Equations

**Time (to take the test)**  
115 minutes  
3 minute break between parts (to retrieve your calculator)

**Format**  
2 parts  
Calculator allowed for part 2  
Access to calculator reference sheet and math formula sheet  
Multiple choice and other question types (drag and drop, fill in the blank)

### What you'll be tested on

The GED test will measure your strength in the skills below. Click on a skill to learn more.

1/24/2018 MyGED® : Study Guide

### 3 Simplify exponents

Simplify numerical expressions with exponents

For example,  $2^6 \times 2^5 = 2^{11}$

#### Example Questions

##### Simplify exponents

**Question:**  
Simplify.

$$(2^9 \times 3^4) \times (2^4 \times 3)^2$$

(A)  $6^{20}$   
(B)  $6^{24}$   
(C)  $2^{13} \times 3^7$   
(D)  $2^{17} \times 3^7$

1/24/2018 MyGED® : Study Guide

### Basic Math

### 1 Fractions and decimals in order

Place fractions and decimals in order.

For example, you can order the set of numbers:

$$\frac{1}{4}, 0.5, \frac{3}{8}, 0.9$$

in order from smallest to largest:

$$\frac{1}{4}, \frac{3}{8}, 0.5, 0.9$$

#### Example Questions

##### Fractions and decimals in order

**Question:**  
Between which pair of decimals should  $\frac{4}{7}$  be placed on a number line?

(A) 0.3 and 0.4  
(B) 0.4 and 0.5  
(C) 0.5 and 0.6  
(D) 0.6 and 0.7

# Calculator Prohibited Indicators



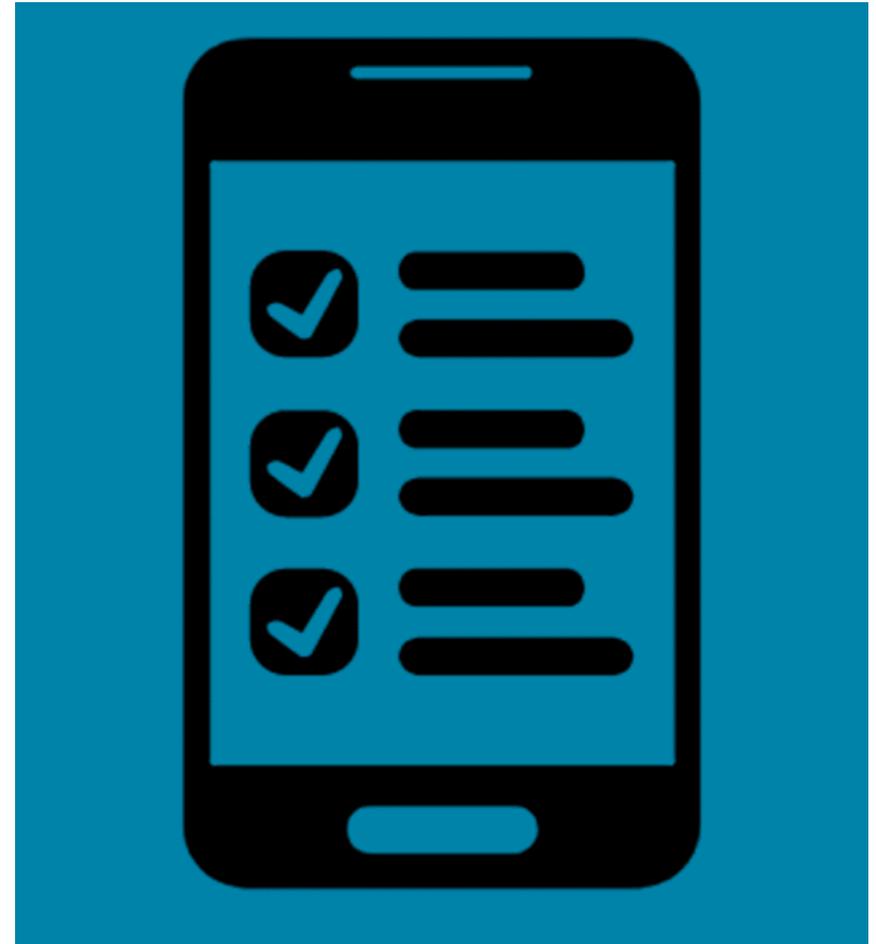
## TEST-TAKER RECOMMENDATIONS FOR CALCULATOR-PROHIBITED INDICATORS

The first several questions of the GED® Mathematical Reasoning test assess eight indicators covering various concepts in number sense and computation (Q.1.a through Q.1.d and Q.2.a through Q.2.d) that prohibit the use of the calculator. GED Testing Service has analyzed data on these calculator-prohibited items, resulting in the following comments and recommendations:

| Indicator   | Background   | Recommendations for Test-takers   |
|---|--|---|
| <b>Q.1.a</b> Order fractions and decimals, including on a number line.  | <p>These questions may require</p> <ul style="list-style-type: none"> <li>comparing or ordering positive numbers, or negative numbers, or both,</li> <li>with or without a number line.</li> </ul> <p>Test takers generally do very well on this indicator, with the exception of questions that require test takers to compare or order a set consisting entirely of <b>negative</b> numbers.</p> | <ul style="list-style-type: none"> <li>Leverage skills in comparing and ordering <b>positive</b> fractions and decimals toward similar skills comparing and ordering <b>negative</b> fractions and decimals.</li> <li>Understand the difference in how negative numbers are compared and ordered:               <ul style="list-style-type: none"> <li>For instance, while 0.7 is greater than 0.2, -0.7 is actually <i>less than</i> -0.2.</li> <li>Since positives and negatives are essentially opposites, the rules for ordering each type of number are applied in a similarly opposite manner.</li> </ul> </li> </ul> |
| <b>Q.1.b</b> Apply number properties involving multiples and factors, such as using the least common multiple, greatest common factor, or distributive property to rewrite numeric expressions. | <p>Test takers generally perform very well on this indicator, which includes questions that include both context or pure computation (no context) and which test factors of a number, multiples of a number, least common multiple, greatest common factor, etc.</p>   | <p>No specific recommendations are provided, as the general population of GED® test takers performs well on this indicator.</p>   |

# Instructional Resources

- Kahn Academy – Get Ready for Algebra 1
- Learner.org – Algebra
- Microsoft Math Solver
- GED Math Crash Course
- Math is Fun – Inequalities
- CK-12 Flexbooks
- Virtual Nerd



# Kahn Academy – Get Ready for Algebra 1

Courses ▾ Search   Donate Login Sign up

Math  
**Get ready for Algebra 1**

8,700  
Mastery points available in course

**Course summary**

- Get ready for equations & inequalities
- Get ready for working with units
- Get ready for linear relationships
- Get ready for functions & sequences
- Get ready for exponents, radicals, & irrational numbers
- Get ready for quadratics
- Course challenge  
Test your knowledge of the skills in this course.

**Get ready for equations & inequalities** 0/1900 Mastery points

- Algebraic equations basics
- Combining like terms
- One-step addition & subtraction equations
- The distributive property & equivalent expressions
- One-step multiplication & division equations
- Two-step equations
- Finding mistakes in one-step equations
- Finding mistakes in two-step equations
- Intro to inequalities with variables
- One- and two-step inequalities
- Testing solutions to inequalities
- Equations with variables on both sides
- Equations with parentheses

**Get ready for working with units** 0/1300 Mastery points

- Intro to ratios
- Intro to rates
- Equivalent ratios
- Rate problems
- Ratio application

**Get ready for linear relationships** 0/1800 Mastery points

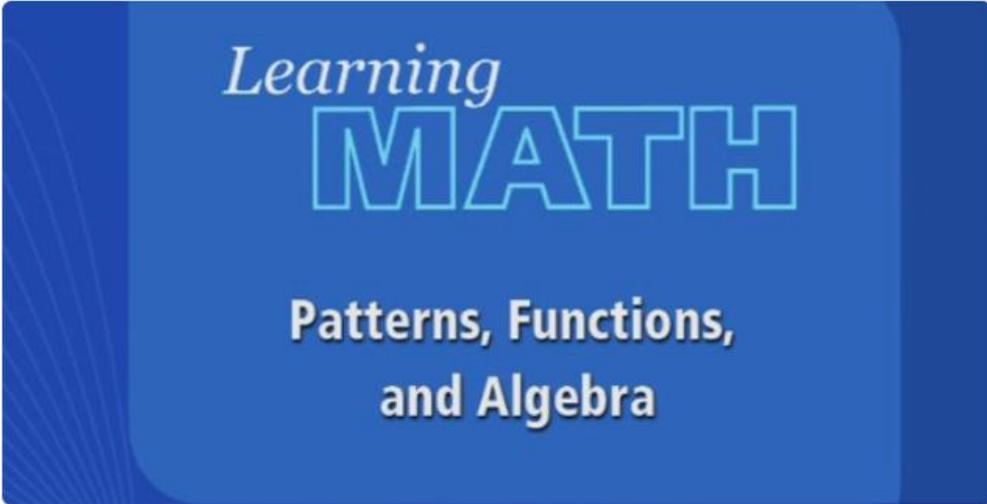
- Constant of proportionality
- Graphs of proportional relationships
- Compare and interpret constants of proportionality
- Writing & solving proportions

<https://www.khanacademy.org/math/get-ready-for-algebra-i>

Mathematics K-2, 3-5, 6-8

## Learning Math: Patterns, Functions, and Algebra

Explore the big ideas in algebra - patterns, functions, and linearity - in this video- and Web-based course for K-8 teachers.



The title card features the word "Learning" in a white serif font, "MATH" in large, bold, blue-outlined block letters, and "Patterns, Functions, and Algebra" in a white sans-serif font below it. The background is a solid blue with a subtle pattern of white lines on the left side.

## Sessions

**HOW TO USE 0**  
About the Learning Math Courses



**SESSION 1**  
Algebraic Thinking



**SESSION 2**  
Patterns in Context



**SESSION 3**  
Functions and Algorithms



**SESSION 4**  
Proportional Reasoning



**SESSION 5**  
Linear Functions and Slope



**SESSION 6**  
Solving Equations



**SESSION 7**  
Nonlinear Functions



**SESSION 8**  
More Nonlinear Functions



**SESSION 9**  
Algebraic Structure



**SESSION 10**  
Classroom Case Studies, Grades K-2



**SESSION 11**  
Classroom Case Studies, Grades 3-5

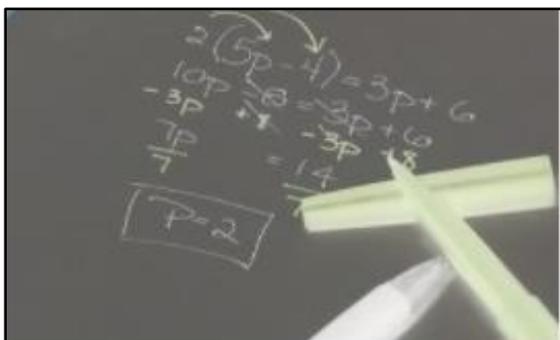


**SESSION 12**  
Classroom Case Studies, Grades 6-8

# Microsoft Math Solver (Free Download)

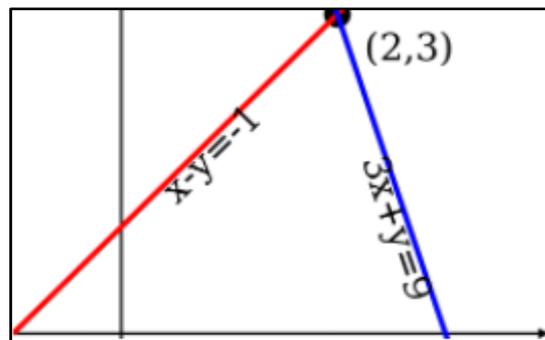
The screenshot shows the Microsoft Math Solver website. At the top left is the logo and the text "Microsoft Math Solver". On the top right are the links "Solve", "Practice", and "Download". Below the logo is a search bar with the placeholder text "Type a math problem" and a "Solve" button. To the left of the search bar is a "Topics" sidebar with categories: Pre-Algebra, Algebra, Trigonometry, and Calculus. Under "Algebra", there are links for "Algebra Calculator", "Trigonometry Calculator", "Calculus Calculator", and "Matrix Calculator". Below the search bar is a grid of mathematical symbols and functions, including AC, log, log base, ln, parentheses, numbers 7-9, division, absolute value, floor, ceiling, factorial, tau, pi, numbers 4-6, less than or equal to, greater than or equal to, fractions, square root, percent, theta, numbers 1-3, multiplication, less than, greater than, square, square squared, x, i, 0, decimal, plus, minus, left arrow, right arrow, cube root, square root, y, infinity, comma, equals, left arrow, and right arrow. Below the grid is a section titled "Get step-by-step explanations" with the text "See how to solve problems and show your work—plus get definitions for mathematical concepts". On the right side, there is a preview of a mobile app interface showing a solution for the equation  $x^2 - 4x - 5 = 0$  using the quadratic formula, with the final answer  $x = \frac{-(-4) \pm \sqrt{(-4)^2 - 4(-5)}}{2}$ .

# GED Math Crash Course



## Unit 1: Algebra Essentials

Simplifying expressions, solving linear equations and inequalities.



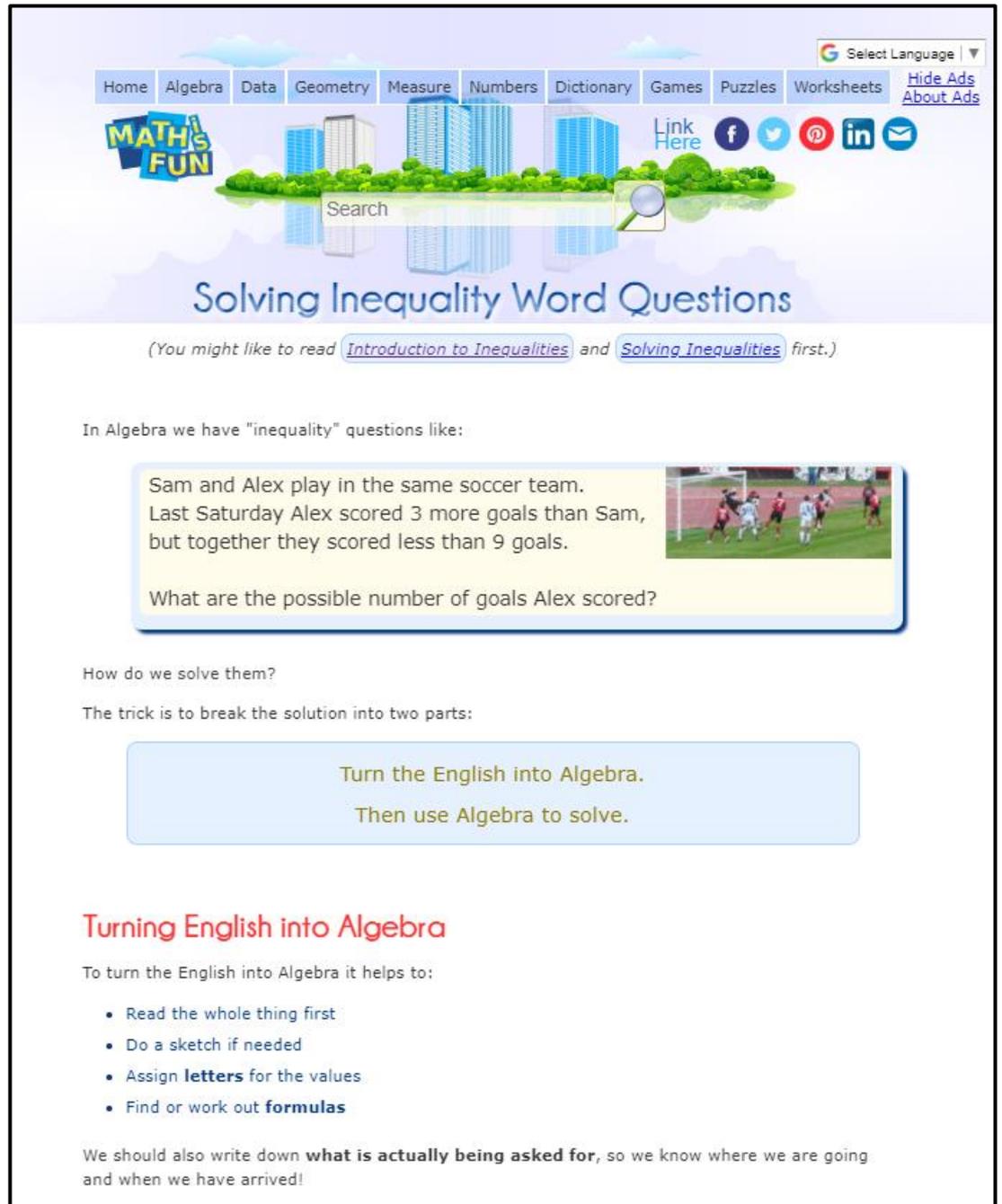
## Unit 2: Slope & Lines

Graphing points & lines, identifying and comparing functions, slope.

<https://sites.google.com/view/gedmathcrashcourse/home>

# Math is Fun

<https://www.mathsisfun.com/algebra/>



The screenshot shows the Math is Fun website interface. At the top, there is a navigation menu with links for Home, Algebra, Data, Geometry, Measure, Numbers, Dictionary, Games, Puzzles, and Worksheets. A search bar is located in the center, and social media icons for Facebook, Twitter, Pinterest, LinkedIn, and Email are on the right. The main heading is "Solving Inequality Word Questions". Below this, there is a sub-heading: "(You might like to read [Introduction to Inequalities](#) and [Solving Inequalities](#) first.)".

In Algebra we have "inequality" questions like:

Sam and Alex play in the same soccer team. Last Saturday Alex scored 3 more goals than Sam, but together they scored less than 9 goals.



What are the possible number of goals Alex scored?

How do we solve them?

The trick is to break the solution into two parts:

Turn the English into Algebra.  
Then use Algebra to solve.

**Turning English into Algebra**

To turn the English into Algebra it helps to:

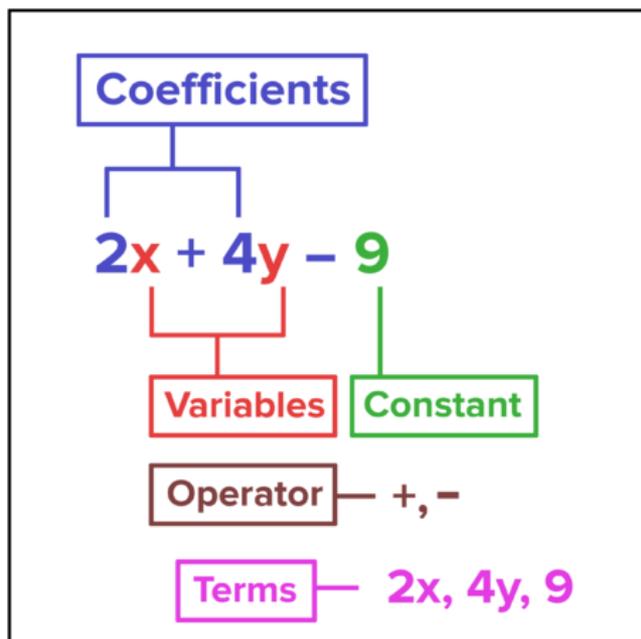
- Read the whole thing first
- Do a sketch if needed
- Assign **letters** for the values
- Find or work out **formulas**

We should also write down **what is actually being asked for**, so we know where we are going and when we have arrived!

# CK-12 Flexbooks

## Vocabulary

You will begin by learning about expressions, equations, and their basic components:



[Figure 1]

Flow chart of Vocab Words

<https://flexbooks.ck12.org/cbook/ck-12-interactive-middle-school-math-8-for-ccss/>

# Virtual Nerd



## Pre-Algebra

Switch to: ▾

This is a list of all 708 Virtual Nerd tutorials in Pre-Algebra, organized by topic.

Instantly search tutorial titles

Expand All Switch to Slider View

- ⊕ The Tools of Algebra
- ⊕ Solving One- and Two-Step Equations
- ⊕ Multi-Step Equations and Inequalities
- ⊕ Factors, Fractions, and Exponents
- ⊕ Rational Numbers
- ⊕ Ratios and Proportions
- ⊕ Percents
- ⊕ Linear Functions and Graphing
- ⊕ Geometry
- ⊕ Real Numbers and Right Triangles
- ⊕ Perimeter, Area and Volume
- ⊕ Probability and Data Analysis
- ⊕ Polynomials and Nonlinear Functions

<https://www.virtualnerd.com/pre-algebra/all/>

Tuesdays for Teachers  
December 7, 2021

# Trends in Students' Knowledge & Skill Gaps

## Reasoning through Language Arts, Part 1

*Co-presenters:  
GEDTS Content Area Specialists  
Test Development Division*



# Tuesdays for Teachers

## 12:30-2:00 PDT/3:30-5:00 EDT

| December 7, 2021 | Reasoning Through Language Arts, Part One  |
|------------------|--|
| January 25, 2022 | Reasoning Through Language Arts, Part Two  |
| February—March   | <ul style="list-style-type: none"><li>• Social Studies</li><li>• Science</li></ul>   |
| May 2022         | <ul style="list-style-type: none"><li>• Individual “Hot Topic Sessions” based upon Educator and Administrator interest and GEDTS observations of student and educator trends</li></ul> |

# SUCCESS



**WHAT PEOPLE THINK  
IT LOOKS LIKE**

# SUCCESS



**WHAT IT REALLY  
LOOKS LIKE**



# Thank you!

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