

What Is the GED Math Test Like?

The GED math test is the most difficult part of the GED for many students. The thinking skills required for GED math are more specialized. They're math thinking skills. Since most people work with language a lot more than with numbers, language skills come easier for many people. Still, you can master GED math, with the right tools and the right approach.

The GED math test has two parts. One part of the math test doesn't allow you to use a calculator, and the other part does. The calculator will be provided to you at the test site; you can't bring your own. The calculator you'll need to use is the Casio fx-260 Solar Scientific Calculator. Since it's a little more complicated than a simple calculator, it's a good idea to buy this calculator to practice with (it's not expensive). It has some advanced features that can be helpful and time-saving on the GED test. And, since it operates a little differently than non-scientific calculators, you'll want some practice to make sure you know how to use the basic features.

Learn More about the Casio f-260 Solar Scientific Calculator:
<http://www.passGED.com/links/category/casio-fx260-calculator/>

For both parts of the test, you'll be given scratch paper to work out problems and make notes.

Each part of the GED math test counts the same amount toward your final score, and each part will have 25 questions. You'll have 45 minutes for each part. That gives you just over 1 minute, 45 seconds per question. If you average about a minute and a half (1 minute, 30 seconds) for each question, you'll have time to go back over your answers. On the math test especially, though, you won't spend the same amount of time on each question. Some questions should be easy and only take a few seconds, and some questions will need more time.

The makers of the math test want you to master:

- ! the ability to solve problems, analyze, and reason
- ! the ability to understand word problems, charts, tables, graphs, and diagrams
- ! the ability to understand math problems from real-life situations

The math test covers four general areas of math, and each is approximately 20% to 30% of the test, or about 12 to 13 questions.

! **Number Operations and Number Sense** includes understanding negative and positive numbers, fractions, decimals, percents, scientific notation, ratios, proportions, roots and exponents and using these in real-life math problems. You'll also need to understand different mathematical operations, like addition, subtraction, multiplication, and division, and when to use them. The test also expects you to be able to estimate to solve problems and check your answer.

! **Measurement and Geometry** includes understanding concepts about geometric figures (like triangles, rectangles, lines, angles, and circles) and comparing them to each other. You'll need to be able to visualize how figures look if they're turned or flipped, use the Pythagorean Theorem to solve problems (learn to look for right triangles in diagrams!), graph a linear equation and understand graphed lines (including slope), use appropriate units of measurement and convert a measurement to a different type of unit (like inches to feet), solve problems of geometric sizes (like area, volume, or perimeter, including changes in measurements based on changes in the figure), solve problems about rate (like miles per hour), and read measurements (from scales, meters, or gauges).

! **Data Analysis, Statistics, and Probability** includes understanding tables, charts, and graphs, including choosing effective ways to show data; analyzing, making conclusions about, making predictions from, and evaluating arguments based on data; understanding and using mean, median, and mode; and simple, dependent, and independent probability.

! **Algebra, Functions, and Patterns** includes understanding variables; manipulating, changing, creating, and solving equations and expressions that include variables; showing equations involving variables as tables, graphs, equations, or in words; and understanding the meaning of formulas.

That's a lot of math! But it's definitely learnable, and focusing on understanding basic math concepts and developing math thinking skills will help. Most of the problems on the GED math tests are word problems, since the GED creators want to know that you understand how to solve problems in normal, everyday situations. You'll see situations involving work, family and home, technology, and other everyday math contexts. Part of studying for the math test is understanding what *type* of math is needed in different situations and then being able to apply it.

80% of the math questions (40 questions) are multiple choice, which means that if you can estimate a solution, you may be able to choose the answer quickly, without working out every step of the problem. That's a big time saver on the GED. 20% of the questions (about 10 questions) ask you to solve the problem without multiple choices. You'll enter your answer in a grid. You'll want to double-check these answers, since a simple error might throw you off.

About half of the GED math questions include a visual part of some kind, like a diagram, chart, table, map, or other graphic.

The GED math test's thinking skills are divided into three types. About 20% (10 questions) of the test covers **procedural questions**, which ask you to choose the correct way to solve a problem; read and understand graphs, charts, and tables; make geometric figures; and round, estimate, or order numbers. About 30% (15 questions) of the math test are **conceptual questions**, which ask you to show that you know how basic math ideas work. The rest of the test, 50% or 25 questions, is about **solving math problems**. You need to understand what the question is asking for, choose the right information to use, choose the right math ideas needed to solve the problem, and solve it!

Why Is Math So Hard to Pass?

Many students find the math portion of the GED test more difficult than any other part. The GED math isn't necessarily hard. It's just confusing because you're not familiar with what it's talking about. Many students have trouble understanding what the math questions are really asking, and speaking the language of math. Math just isn't as familiar as reading or writing.

The math test also covers the broadest range of knowledge of any test. It includes number sense and operations, measurement, data analysis, geometry, and algebra. Like the writing multiple choice test, the math test needs specialized knowledge and understanding. That's your mathematical background, your understanding of how math works. It's a bit more background knowledge than you need for science, but it's definitely learnable and doable.

The math test also requires logical thinking and problem solving skills in the specialized area of math. You need to bring out your critical thinking skills, and the more you've practiced them for social studies, science, and reading, the easier it will be to apply them in math. Think of a math problem like a puzzle. You're trying to think it through to figure out what it means and get the answer.

Because the math test is more difficult for everyone, fewer correct answers usually mean a higher score compared to the other tests. So, don't let the test throw you. Also, since 80% of the questions are multiple choice and since the free-form answer grids give you clues to what the right answer could be, you've got a safety net to prevent simple math errors from weighing you down.

So, what do you need to pass? Here's a good strategy for passing the math test.

- ! Don't sweat the tough algebra questions, like quadratic equations. At most there are 3, maybe 4 questions that deal with difficult algebra. If you missed all of these, and did okay on the rest, you would easily pass the test. You could spend a lot of time relearning algebra and still miss a couple of the questions. Why? Because it's hard to learn and remember more difficult math, and you've got a lot of other things you're trying to learn and remember. If there are one or two things, like quadratic equations, that you just don't seem to get, don't sweat your time on them. Instead, focus on really thoroughly learning the easier things and being able to think through the word problems and diagrams to understand what they're really asking.
- ! Choose the easiest way to solve problems. Maybe you don't remember how to do quadratic equations and have no idea how to solve for x . You can probably still find the correct answer by trying to plug the values for x from the answer choices into the equation to see if they work.
- ! Go back to the basics. If you can do simple number operations with different types of numbers, measurement, and some data analysis in abstract and word problem forms, you will do fine on the GED tests. Spending lots of time on the basics will help you the most.
- ! Focus on word problems. Get as much practice with these as you can. Over 70% of the questions on math test are stated as math word problems. What you want to do is develop a basic

word solving strategy that allows you to identify what you need to solve. You need to figure out the question. Finding the answer usually isn't too hard.

- ! Learn to pace yourself and not waste time on questions you can't answer. Answering all the questions that are easy and getting the right answers to questions you can do with a little work is your best strategy. You don't need to get every question right to pass, so make sure you have time to answer all the questions you know first. Then you can try to improve your score by figuring out some of the harder ones.

Working with actual GED practice questions and then going back to relearn forgotten material is the best overall strategy.

What If I Almost Passed but Can't?

A lot of students are frustrated with the GED math test. Maybe you've taken the test before and haven't passed. Maybe you've taken it three or four times, and scored 350 to 400... just short of passing. That's not really too uncommon! The good news is, you've got some basic math skills in place. You're almost there. But you've hit a roadblock. You're not improving. Take a breath. Don't get too frustrated. But you've got to change what you're doing, so that you can move forward.

What do you do?

! Start with mastering the basics.

Make sure you've got the basic math down that you need in order to do those more difficult problems. If you've got a "hole" in your basic math knowledge, it could be stopping you from moving forward. You need to know basic math and numbers skills, including addition, subtraction, multiplication, and division; order of operations; working with fractions, decimals, percents, and negative numbers; ratios (and recognizing ratios in word problems); estimating, rounding, and doing math in your head; using the Casio fx-260 calculator; and measurement. You also need to know how to read a word problem and translate it into a math problem. Since most of the problems on the GED math test are word problems, this is an important skill. Have a strategy for answering GED math word problems. Review your basic math skills and make sure you fully understand them before moving forward, because you'll need them to do higher-level math.

! Think about what you're studying.

What can you do, and what can't you do in GED math? A good strategy here is to go through a GED practice test and make a note of the problems that you have trouble with. What is there that you *know* you'll get wrong?

- * In geometry, what about right triangles? Or transversals, lines that pass through parallel lines? What about recognizing geometry problems in diagrams? Or area and volume problems?
- * In algebra, quadratic equations give most people trouble, but there will only be one or two on the test. What about graphing lines from equations? Finding slopes? Do math problems with greater than ($>$, \geq) or less than (\leq , $<$) symbols instead of equals signs throw you? What about making equations from word problems or understanding what equations mean?
- * In data analysis, do you have problems with mean and median? What about reading and evaluating data in charts and tables? What about probability problems?

Once you've identified two or three things that you have definite problems with, go learn those things. By focusing your studying on one or two topics that you don't know, you'll be able to improve your score, without extra studying of a lot of material you already know, or spreading yourself too thin with too much difficult studying.

! Think about how you're studying.

Is your studying really effective? If you're not improving, then something's wrong. That might mean you've got the wrong study

materials. If you're studying from a book, think about finding a different resource with more material, or at least different material, that can help you on the GED. If you're having trouble studying on your own, see if someone in your family or one of your friends can help you study. If you've been taking a class, maybe it's not the right class for you. Think about how much time you're spending studying, what time of the day you study, and what you do to test your own knowledge. The more you can improve your study practices, the quicker you can improve your math skills.

! Think about your test-taking skills. Are there ways you can improve your test-taking skills to inch up your score? Being more relaxed when you take the test, managing your time, and using estimating and guessing strategies, you might be able to make significant improvements.

! Practice careful math. When you're taking the GED math test, little errors can cause you a lot of problems. Watch for negative numbers, decimal points, greater than vs. less than signs, and other small but important problems. When you're studying, make a note of simple errors you make, like accidentally dropping a negative sign when you're doing a math problem. That's the kind of error that can drive you crazy, because you can *know* the math and still get the problem wrong. As you're studying, become aware of the kind of simple math errors you're likely to make. On the test, pay special attention to problems where you might make those kinds of errors. It'll help you work better and score higher.

How to Study for the Math Test

You're not just studying math for the sake of learning. You're studying for the GED math test, and that means keeping in mind some things that will make you more successful on the test and make your learning go faster. The GED math test isn't just going to have one type of math on it. It's a broad math test that covers a lot of areas. You'll need to pull out of your memory something different that you know for every question. In a way, this makes it harder than a geometry test at school, or even a geometry final exam. You don't just need to remember about how to find area and volume, or everything you've learned in geometry. You need to remember basic math, geometry, data analysis, probability, and algebra. Each question is on a different topic. Because our memories work better when things are grouped, or when they're related, a math test that covers a lot of material like this is more difficult than a math test on a single topic would be.

Knowing What to Study

When you're taking the GED math test, the first thing you need to do is figure out what kind of problem you're looking at. Is this geometry? Is it asking about right angles? Graphing algebra? Adding and subtracting? Figuring percentages? Or something else? Going through a GED practice test and trying to figure out what each question is can help you out.

You can use the GED Academy online practice test (http://www.passGED.com/practice_tests.php) as an excellent tool for this by choosing an answer, and then checking your answer

and looking at the explanation. The explanation will give you, not just the correct answer, but the information on how to solve the problem. That's the information you need; what kind of problem is it? Pay special attention to the questions that you think are hard. Don't just take the practice test. Find the hard questions, and then figure out what kind of questions they are, and then study how to solve them.

Don't forget, the math practice test also gives you information on *how much* you know, as well as what you know. Here's how to judge the score from your practice test:

- ? Did you score 450 or above? Congratulations, you're ready for the test!
- ? Is your score between 410 and 450? You're close! If your other scores are high, you probably don't need to worry, but brush up on what's hardest.
- ? Is your score between 350 and 410? You're probably only missing a passing score by a few questions. Find out one or two areas of math that you really don't understand, and study them well.
- ? Is your score below 350? Start studying basic math, and focus on really understanding math fundamentals and how to approach word problems. Find one or two areas really difficult? Don't worry about them. Focus on areas that are easier for you. They'll improve your score more in less time.

Pay attention to what problems are hardest, and find out how to solve them.

- ! While you take the test, note down the problems that are hardest.

- ! What was hard about the problem? Was it the way it was stated? Was it the subject matter? Study the solution to the problem until you really understand it.
- ! Find similar problems in your study program, or ask a teacher about the problem.
- ! Identify areas you need to study based on the problems that were difficult.

Take another practice test once you've mastered a little more math—and be sure to notice how much you've improved!

How Much Do You Study?

Once you know what to study, you need to know how much to study. Your goal should be to study for mastery. The more basic the math is, the more important it is to master it. Here's the rule: Study until it's easy, or at least not hard. The more problems you do, the easier they get. That's why you just keep trying new problems in whatever you're studying until you get the hang of them. It's just like learning to drive, or learning the guitar or piano. The more you do it, the easier it gets.

How Do You Remember How to Solve a Problem?

Try writing down the steps you take to solve the type of problem you're working on. Put them in your own words, so that you can remember them easier. Practice by looking at the steps to help you solve the problem. Then, the next day, without looking at your notes, try to write down the steps from memory.

After you've written them down, double-check them with your notes. Keep trying until you can write down how to do the type of problem from memory. If you practice calling up what you remember, it'll be easier to remember next time.

How Do You Understand How to Do a Math Problem?

Don't just go by steps. Try to understand why it's done that way. Work through an example problem, trying to figure out why you solve it a certain way. If you understand why, you'll really remember it. Don't worry about taking a long time with one or two practice problems while you figure it out. This is where the learning happens, because real learning is about understanding.

Study the Basics, Learn the Details

Math is like a big tower. If you're missing a brick at the bottom, it's all going to come tumbling down. You've got to know the basic math if you're going to do the harder math, so make sure you know how to work with numbers. Learn to add, subtract, multiply, and divide in your head. Learn about what fractions, decimals, ratios, and percents are, and how to do basic math with them. Learn about different types of numbers (especially negative numbers!) and math symbols. While you're working, you need to keep track of the little things... and it's subtracting wrong or dropping a negative symbol that's going to trip you up. So study the basics, and pay attention to all those little details.