

# Introduction

Welcome to the **NTK SAT MATH LEVEL 2 book!** This book is designed to give you the boost you need to confidently take the SAT Math Level 2 test. Our book offers you:

**What You Need to Know;**

The essential math information you need to get a high score.

**Examples;**

To highlight ideas and techniques.

**Example Questions;**

So you can see how the concepts work with SAT Math Level 2 multiple-choice questions.

**Practice Tests;**

At the end of the day, it's about doing the math, right? We have 4 tests to let you practice your skills.

**Answers and Solutions;**

Each question on every of our test has a full explanation. More than that, we provide multiple solutions so you can see how to approach the same problems from different angles: using algebra, plugging-in or a graphing calculator.

**Flash Cards;**

To get a top score, you need to remember lots of formulas and techniques. We provide over 100 flashcards that enable you to brush up your knowledge anywhere, anytime.

# The SAT Math Level 2 Test

## **What is it?**

The SAT Math Level 2 test is produced by the College Board, a non-profit association of colleges in the US. If you want to go to a US tertiary institution for engineering, mathematics, science or economics, then a good SAT Math Level 2 score is a MUST. Even if you intend to focus on the humanities, a fair SAT Math Level 2 score shows that you have challenged yourself with material that may not be in your area of expertise – just the kind of thing college admissions officers are looking for.

## **SAT II Math IIC Test**

The SAT Math Level 2 test used to be called the “SAT II Math IIC” test. The name changed but the test didn’t!

## **Do I have to use a calculator in the test?**

Yes! Not every question requires one, and sometimes using a calculator is not the fastest way to go, but you definitely need one available to do many of the calculations quickly and handle things like square roots and trigonometry. Also, it’s preferable to use a graphing calculator; this can REALLY speed you up.

## **What kind of calculator can I use?**

What with the zillions of different models about nowadays we obviously can’t give a complete list of which are acceptable or not. Generally though, if you have a scientific calculator or a graphing calculator you’ll be okay. But be aware, **certain general types of calculating devices are banned!**

These are definitely **not** okay for the Math subject tests:

Writing pads, pocket organizers, mobile phone calculator options, laptops, QWERTY keyboard calculators or stylus/pen input devices.

These are not allowed on the test, so if you were thinking of using one of these then don’t. Get a scientific or graphing model.

## What's the test format?

Very straightforward. You have **one hour** to complete a maximum of **50 questions**. Each question is **multiple-choice** with five possible answers (A) → (E). You complete an answer sheet by shading in the appropriate bubble. You do not get points for your actual work.

## How's it scored?

Simple:

$+1$  for every **correct** answer

$-\frac{1}{4}$  for every **wrong** answer

$0$  for an **omitted** question.

The  $-\frac{1}{4}$  is designed to remove the benefit of random guessing.

## What's the grading?

This is a bit strange. The lowest score is about 300 (it varies). To score a 300 you have to get nearly everything wrong. It's just about impossible to do this bad, even if you guess on everything! The highest score is **800**, but 800 is not necessarily 100%. You can still get 800 even if you get several questions wrong and omit a few. The actual number of questions right, wrong or omitted to get 800 varies slightly from test to test.

## What's a good score?

A “good score” depends on what you want to achieve at college. If you want to go to MIT for science or engineering, then anything less than 750 is going to be considered weak. If you are applying to a good liberal arts college, then 600 might be considered an excellent score. Generally though, 700 is considered above average. To get this, you need to get 35-36 correct and none wrong.

If you don't think you can make a score of 550 – even after practice – you should think about taking the SAT Math Level 1 test (the easier cousin of the SAT Math Level 2 test) and aim for a higher score.

## **When should I take it?**

If you are following a US system, you should take it after you have completed (or nearly completed) a **Pre-calculus honors** course. If you are taking classes in a British System or IB system, then take it toward the end or after your **first year** of math A levels or Diploma course. Of course, you may be confident and good enough to take it earlier, but the average student is unlikely to have sufficient skills or knowledge to get a decent score.

## **Should I guess answers?**

Even if you have *no idea* about the answer for a particular question, it's okay to guess; overall, you will not lose out. However, in many questions you may be able to eliminate one or more choices by using logical thinking and knowledge of the situation. In these cases it is definitely to your benefit to make an educated guess.

## **How to use this book?**

**Read through all of the chapters** – even if you think of yourself as a math genius. If you are familiar with a particular topic, then a quick skim through that section should do. On the other hand, if something is unfamiliar (which is common for topics in the miscellaneous section for example), then you need to read the materials thoroughly and go over the examples and example questions in detail. Make sure you understand each topic completely before moving on to the next one.

**Have a pen and paper handy.** If you have just read about a formula that is new to you, write it down a couple of times. Write it down with different variables. **DO** something; don't just read. When you come to an example question, cover up the answer first and think about how *you* would solve it. Even if you can't get the answer, it is important to set your mind thinking the right way. Reading a mathematics book is not the same as reading a novel or magazine – you have to think **HARD!**

**Do the sample tests.** After studying all the chapters, go on to the sample tests. There is advice on how to take them on pages 207 – 209.

**Check the detailed solutions** for both the questions you got wrong or omitted and even those you got correct but guessed. Follow the steps in the solutions and be sure that you know exactly what is discussed. Go back to the corresponding chapter to review if you are still unsure about a concept or technique, (the chapter corresponding to each question is given in the solutions too.) For questions with multiple answer methods, choose the one you feel most comfortable with. There is no definite best method in mathematics. The “best” technique is the one that enables you to get the correct answer in the shortest time; nobody cares how you get it!

**Keep a record of questions you get wrong.** Are there any patterns? For example, do you keep getting function questions wrong or do you have problems remembering certain formulas? Find your particular weaknesses and revise those topics in which you often make mistakes.

**Use the FLASH CARDS.** At the back of the book are over 100 tear-out flash cards covering all the main concepts, formulas and techniques you need to succeed in the SAT Math Level 2 test. Read them whenever you have a spare moment: on the bus, during lunch or even between classes. Get into the habit of doing some cards everyday. This will help you to memorize all the stuff necessary.

**Be consistent in your learning.** It’s a lot better to spend just 20 minutes everyday reading the book, starting well before the actual test, rather than trying to cram everything into your head the night before. Pace your learning and draw up a review plan. In this way, you’ll be confident of success.

### **What can do I do for extra help?**

Although some people find they can work things out on their own, many students want a little extra help to achieve their potential. At **NTK Learning Center Ltd.**, we have years of experience helping students with the SAT Math Level 2 and other tests. We offer **intensive review courses** covering all the material for the SAT Math Level 2 test in both small classes (maximum of 6 students) and individual lessons. NTK’s experienced, full-time instructors have the expertise and resources to help you reach your goals in math, the sciences and the humanities. Contact us for further information on how we at NTK can help you (details on back cover).