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MATH LEVEL 2

SAT^{*} II

数学

Level

2



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定价: 60.00元

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图书在版编目(CIP)数据

SAT II-数学 Level 2: 英文 / (美)迪尔(Diehl, J. J.)编著. —北京: 群言出版社, 2008.12
ISBN 978-7-80080-947-7

I. S… II. 迪… III. 数学课—高等学校—入学考试—美国—教学参考资料 英文 IV. G634

中国版本图书馆 CIP 数据核字(2008)第 191478 号

版权登记: 图字 01—2008—6070

SAT Subject Test: Math Level 2

ISBN: 978-0-07-145672-1

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SAT II 数学 Level 2

出版人	范芳
责任编辑	李强
封面设计	盛兰
出版发行	群言出版社(Qunyan Press)
地址	北京东城区东厂胡同北巷1号
邮政编码	100066
网站	www.qypublish.com
电子信箱	qunyanchu@126.com
总编办	010-65265404 65138815
编辑部	010-65276609 65262436
发行部	010-65263315 65220236
经销	新华书店
读者服务	010-65220236 65265404 65263345
法律顾问	中济律师事务所
印刷	北京西中鼎印刷有限公司
版次	2009年1月第1版 2009年1月第1次印刷
开本	880×1230 1/16
印张	26
字数	191千字
书号	ISBN 978-7-80080-947-7
定价	60.00元

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SAT 考试概述

一、考试认可

SAT 考试 (Scholastic Assessment Test) 是由美国大学委员会 (College Board) 组织的“学术水平测验考试”，是美国高中生进入美国大学的标准入学考试。SAT 考试成绩是美国大学唯一能够得到的、可以比较来自不同地区和学校学生的成绩，所以对录取与否及奖学金多少的影响非常大。美国 3600 余所大学都接受 SAT 考试成绩。

二、考试简介

SAT 考试分为两部分：

1. SAT I (SAT Reasoning Test)：包括数学、阅读、写作 3 个部分，考试时间为 3 小时 45 分钟，各部分的测试内容、测试题型和分值如下：

数学部分：

测试内容	测试题型	分值
运算能力、代数与函数、几何、数据分析、统计学及基础概率论	选择题、应用题	800

阅读部分：

测试内容	测试题型	分值
批判性阅读、句子理解	阅读理解、句子填空	800

写作部分：

测试内容	测试题型	分值
语法、词汇、语言应用	写作、语法	800

2. SAT II (SAT Subject Tests)：包括数学、物理、化学、生物、文学、美国历史、世界历史、外语 (汉语、日语、德语、法语、西班牙语、拉丁语等 20 种)。部分美国名校只要求中国留学申请人提供 SAT I 的成绩，部分院校及专业要求申请人提供 SAT II 的单科考试成绩。

SAT II 考试时间为 1 小时，大部分为选择题，每科满分为 800 分，主要考查考生某一学科的知识 and 运用这些知识的能力。

三、考试报名

决定报名前，首先要有一张国际通用信用卡，如果没有，需要办理一张中国银行的“长城国际信用卡”。具体报名程序如下：

1. 登录 www.collegeboard.com 注册个人信息，从而获得用户名和密码；
2. 登录 SAT 首页，进入自己的账户。填写个人在校成绩、期望申请的专业等信息；
3. 上述信息填写完毕后，第二次登录时，这些信息不会出现，此时直接点击“new registration”进入即可。在注册第一页选择考试类型、考点、年级 (美国的 12 年级等于中国的高中三年级) 等；
4. 点“continue”进入下一页面，选择考试时间；
5. 进入下一页面，选择是否接受“student answer service”的服务 (如果选“yes”，要交额外的费用，但考试后可获得考试报告)；
6. 进入下一页面，填写欲申请的学校 (也可以不填)；
7. 进入下一页面，选择考试地点 (如选择香港，点“search”，会出现几个地点，可选择其中之一；点“add”，再选择)；
8. 进入下一页面，此时会出现“registration information”、“fee and payment”和“credit card information”，填写信用卡类型、卡号及有效期，之后会得到确认单，报名即完成。

四、什么是 PSAT?

PSAT (Preliminary SAT) 是 SAT 的预备测验, 这个测验的分数可以用来申请 NMSQT (National Merit Scholarship Qualifying Test, 美国的模范学生奖学金资格测验)。对于广大中国考生而言, PSAT 难度要低于 SAT, 但是考试科目基本一致, 都是阅读、写作、数学, 考生可以通过 PSAT 的培训来逐步适应 SAT 的考试。可以说, PSAT 是 SAT 的预演与准备, PSAT 与 SAT 相结合的培训能够更有效地帮助中国考生打好基础、适应考试, 更有利于考生在 SAT 考试中考出好成绩。

五、计分方式

1. SAT 每一类型考题都是由易而难排列。
2. 除 SAT I 部分数学题目外, SAT II 和 SAT I 其他所有题目答错皆倒扣分, 但未作答的题目则以零分计算。
3. 作答时可利用题目的空白处计算或做记号, 但所有答案均需填写在答题纸上才计分。答题纸要小心填写, 如有污损应擦拭干净。
4. SAT I 阅读、数学及写作各部分的分值均为 800 分, SAT II 每科分值也是 800 分。

六、成绩查询

考后两周, 考生可通过网站 www.collegeboard.com 查询考试成绩。

七、考试建议

1. 准许带进考场的物品:

- (1) 护照及准考证
- (2) 2 支 2B 铅笔和橡皮擦
注意: 不要使用自动铅笔、钢笔或圆珠笔。自动铅笔涂黑的效果不如 2B 铅笔, 使用钢笔或圆珠笔答题则会得 0 分。
- (3) 计算器(用于数学部分)
- (4) 手表(不带语音报时功能)
- (5) 手袋或背包(必须放在座位下方)
- (6) 一些食品和饮料(必须放在所带的手袋和背包里, 考试休息间隙时可以食用)

2. 不准带进考场的物品:

- (1) 草稿纸
- (2) 字典、书和笔记本
- (3) 圆规和各种尺子
- (4) 荧光笔和彩色铅笔
- (5) 随身听和便携式 CD 播放器
- (6) 相机
- (7) 带有语音报时功能的手表
- (8) 手机以及除计算器外的其他电子设备

3. 备考建议

SAT 考查考生经过长期学习所获得的能力, 准备考试有短期和长期两种准备:

A. 短期准备:

- (1) 熟悉题目结构、题型、考试要求及考试程序;
- (2) 详读 International SAT Program Registration Bulletin 手册, 了解更多考试及考前和考后的相关事项。

B. 长期准备:

一般而言, 短期集中的练习对熟悉考试题型和减少考试焦虑颇有帮助, 但长期努力才是准备考试的不二法门。考生应多选修较富挑战性的学术性课程, 广泛研读学术性及课外书籍。



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PART I

ABOUT THE SAT MATH LEVEL 2 TEST

CHAPTER 1

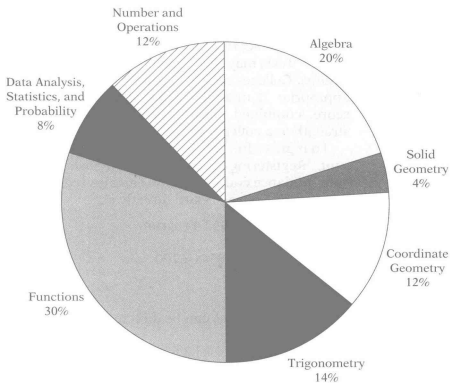
TEST BASICS

ABOUT THE MATH LEVEL 2 TEST

The SAT Math Level 2 test is one of the Subject Tests offered by the College Board. It tests your knowledge of high school math concepts and differs from the SAT, which tests your math *aptitude*. The test consists of 50 multiple-choice questions and is 1 hour long.

The SAT Subject Tests (formerly known as Achievement Tests) are the lesser-known counterpart to the SAT, offered by the same organization—the College Board. However, whereas the SAT tests general verbal, writing, and mathematical reasoning skills, the SAT Subject Tests cover specific knowledge in a wide variety of subjects, including English, Mathematics, History, Science, and Foreign Languages. SAT Subject Tests are only 1 hour long, significantly shorter than the SAT; and you can take up to three during any one test administration. You can choose which SAT Subject Tests to take and how many to take on 1 test day, but you cannot register for both the SAT and Subject Tests on the same test day.

The Math Level 2 test covers the topics shown in the pie chart below.



The Math Level 2 test is designed to test a student's math knowledge, ability to apply concepts, and higher-order thinking. Students are not expected to know every topic covered on the test.

When determining which SAT Subject Tests to take and when to take them, consult your high school guidance counselor and pick up a copy of the "Taking the SAT Subject Tests" bulletin published by the College Board. Research the admissions policies of colleges to which you are considering applying to determine their SAT Subject Test requirements and the average scores students receive. Also, visit the College Board's website at www.collegeboard.com to learn more about what tests are offered.

Use this book to become familiar with the content, organization, and level of difficulty of the Math Level 2 test. Knowing what to expect on the day of the test will allow you to do your best.

WHEN TO TAKE THE TEST

The Math Level 2 test is recommended for students who have completed *more than 3 years* of college-preparatory mathematics. Most students taking the Level 2 test have studied 2 years of algebra, 1 year of geometry, and 1 year of precalculus (elementary functions) and/or trigonometry. Many students take the math Subject Tests at the end of their junior year or at the beginning of their senior year.

Colleges look at SAT Subject Test scores to see a student's academic achievement because the test results are less subjective than other parts of a college application, such as GPA, teacher recommendations, student background information, and the interview. Many colleges require at least one SAT Subject Test score for admission, but even schools that do not require SAT Subject Tests may review your scores to get an overall picture of your qualifications. Colleges may also use SAT Subject Test scores to enroll students in appropriate courses. If math is your strongest subject, then a high SAT Math score, combined with good grades on your transcript, can convey that strength to a college or university.

To register for SAT Subject Tests, pick up a copy of the *Registration Bulletin*, "Registering for the SAT: SAT Reasoning Test, SAT Subject Tests" from your guidance counselor. You can also register at www.collegeboard.com or contact the College Board directly at:

College Board SAT Program
P.O. Box 6200
Princeton, NJ 08541-6200
1-800-728-7267
(609) 771-7600

General inquiries can be directed to: SAT@info.collegeboard.org or (609) 771-7600.

The SAT Math Level 2 test is administered six Saturdays (or Sunday if you qualify because of religious beliefs) a year in October, November, December, January, May, and June. Students may take up to three SAT Subject Tests per test day.

THE LEVEL 1 VS. LEVEL 2 TEST

As mentioned, the Math Level 2 test is recommended for students who have completed *more than* 3 years of college-preparatory mathematics. The Math Level 1 test is recommended for students who have completed 3 years of college-preparatory mathematics. Most students taking the Level 1 test have studied 2 years of algebra and 1 year of geometry.

Typically, students who have received A or B grades in precalculus and trigonometry elect to take the Level 2 test. If you have taken more than 3 years of high school math and are enrolled in a precalculus or calculus program, don't assume that taking the Level 1 test guarantees a higher score. Many of the topics on the Level 1 test will be concepts studied years ago.

Although the topics covered on the two tests overlap somewhat, they differ as shown in the table below. The College Board gives an approximate outline of the mathematics covered on each test as follows:

Topic	Level 1 Test	Level 2 Test
Algebra and Functions	38–42%	48–52%
Plane Euclidean Geometry	18–22%	—
Three-dimensional Geometry	4–6%	4–6%
Coordinate Geometry	8–12%	10–14%
Trigonometry	6–8%	12–16%
Data Analysis, Statistics, and Probability	6–10%	6–10%
Number and Operations	10–14%	10–14%

Overall, the Level 2 test focuses on more advanced content in each area. As shown in the table, the Level 2 test does not directly cover Plane Euclidean Geometry, although Plane Euclidean Geometry concepts may be applied in other types of questions. Number and Operations was formerly known as Miscellaneous.

This book provides a detailed review of all the areas covered on the Math Level 2 test. More advanced topics that are covered only on the Level 2 test are denoted by an asterisk (*) in the topics list at the beginning of each of the math review chapters.