

Math Workbook
for the
New SAT[®]

RELATED TITLES

5 Strategies for the New SAT

8 Practice Tests for the New SAT

Evidence-Based Reading, Writing, and Essay Workbook for the New SAT

New PSAT Strategies, Practice & Review with 2 Practice Tests

New SAT Challenge

New SAT Premier with 5 Practice Tests

New SAT Strategies, Practice & Review with 3 Practice Tests

Math Workbook for the New SAT[®]

SAT[®] is a registered trademark of the College Board, which was not involved in the production of, and does not endorse, this product.

Acknowledgments

Special thanks to those who made this book possible including Arthur Ahn, Laura Aitcheson, Becky Berthiaume, Michael Boothroyd, Matthew Callan, Potoula Chresomales, Kate Fisher, Adam Hinz, Kate Hurley, Brandon Jones, Rebecca Knauer, Celina Lasota, James Radkins, Justin Starr, Bob Verini, Devon Wible, Daniel Wittich, and many others who contributed materials and advice.

SAT® is a registered trademark of the College Board, which was not involved in the production of, and does not endorse, this product.

This publication is designed to provide accurate and authoritative information in regard to the subject matter covered. It is sold with the understanding that the publisher is not engaged in rendering legal, accounting, or other professional service. If legal advice or other expert assistance is required, the services of a competent professional should be sought.

© 2015 by Kaplan, Inc.

Published by Kaplan Publishing, a division of Kaplan, Inc.
750 Third Avenue
New York, NY 10017

All rights reserved. The text of this publication, or any part thereof, may not be reproduced in any manner whatsoever without written permission from the publisher.

Printed in the United States of America

10 9 8 7 6 5 4 3

ISBN-13: 978-1-62523-155-0

Kaplan Publishing books are available at special quantity discounts to use for sales promotions, employee premiums, or educational purposes. For more information or to purchase books, please call the Simon & Schuster Special Sales Department at 866-506-1949.

Table of Contents

How to Use This Book	vii
Introduction to the SAT Math Test	ix
Test-Taking Strategies	xi
Common Testing Myths	xiii
SECTION ONE: FOUNDATIONAL SKILLS AND KAPLAN METHODS & STRATEGIES	
Prerequisite Skills and Calculator Usage	3
The Kaplan Method for Math	13
The Kaplan Strategy for Translating English into Math	15
The Kaplan Method for Multi-Part Math Questions	17
SECTION TWO: SAT MATH PRACTICE	
Practice Set 1: Linear Equations	21
Practice Set 2: Systems of Linear Equations	35
Practice Set 3: Inequalities	49
Practice Set 4: Rates, Ratios, Proportions, and Percentages	63
Practice Set 5: Scatterplots	79
Practice Set 6: Two-Way Tables, Statistics, and Probability	93
Practice Set 7: Exponents, Radicals, Polynomials, and Rational Expressions	109

Practice Set 8: Advanced Techniques for Polynomials and Rational Equations	123
Practice Set 9: Functions and Function Notation	137
Practice Set 10: Quadratic Equations and Their Graphs	151
Practice Set 11: Imaginary Numbers	165
Practice Set 12: Lines, Angles, and Triangles	175
Practice Set 13: Similarity, Congruence, and Proofs	185
Practice Set 14: Circles	195
Practice Set 15: 3-D Shapes	205
Practice Set 16: Trigonometry	215

SECTION THREE: PRACTICE TEST

Score Conversion Chart	228
Answer Sheet	229
Practice Test	231
Answer Key	249
Answers & Explanations	250

How to Use This Book

BECOME FAMILIAR WITH THE SAT MATH TEST

Learn the structure of the SAT Math Test—what kinds of questions are on it, how it's scored, and how best to approach it. Knowing what to expect will set you up for success as you prepare. You'll find all the information you need in the next few pages of the Kaplan Math Workbook for the New SAT.

FOUNDATIONAL SKILLS AND KAPLAN METHODS & STRATEGIES

Section One of the Kaplan Math Workbook for the New SAT contains instruction related to prerequisite math skills that you need to master before taking the SAT. Studying or reviewing this material is a great way to warm up. You'll also want to master the methods and strategies we offer: the Kaplan Method for Math, the Kaplan Strategy for Translating English into Math, and the Kaplan Method for Multi-Part Math Questions. These methods and strategies will help you maximize your efficiency and strengths—both of which will go a long way on Test Day.

PRACTICE SETS

This book contains 16 practice sets, arranged by topic. Each practice set begins with a brief instructional review, which includes useful definitions, theorems, formulas, and other relevant information. Before you begin each practice set, read through the review to refresh your memory. As you work through the questions, you'll notice that some have a calculator icon—this means that similar questions have appeared in the Calculator Section of the Practice Tests released by the College Board. It does not, however, mean that you must use a calculator to answer the question.

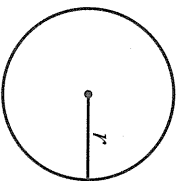
ANSWERS & EXPLANATIONS

Following each practice set, you will find detailed answers and explanations. Use these to determine why you answered a question incorrectly and how to avoid the same mistakes on similar questions in the future. Each explanation includes both advice on how to approach similar questions and a detailed step-by-step solution. You should also read the explanations for questions you answered correctly to ensure that you took the most efficient route to those correct answers.

PRACTICE TEST

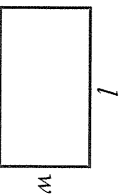
When you have completed the practice sets, take the Practice Test under test-like conditions, using the timing indicated for each section of the test, which is just a little over an hour long. Make sure to check your answers, calculate your score using the conversion chart provided, and read the answers and explanations to reinforce what you've learned.

Each section of the Math test begins with a reference page. Take some time before Test Day to get acquainted with the formulas and other information that is provided on this page.

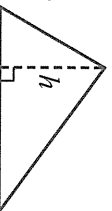


$$A = \pi r^2$$

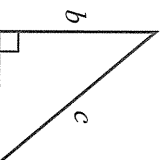
$$C = 2\pi r$$



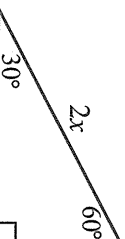
$$A = lw$$



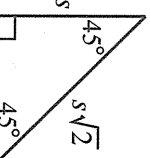
$$A = \frac{1}{2}bh$$



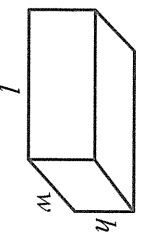
$$c^2 = a^2 + b^2$$



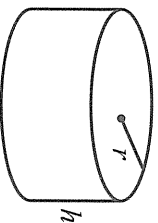
$$x\sqrt{3}$$



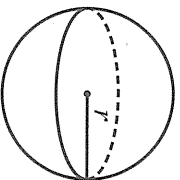
Special Right Triangles



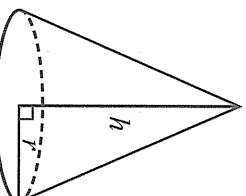
$$V = lwh$$



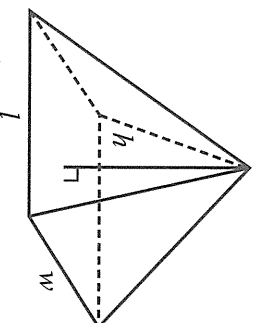
$$V = \pi r^2 h$$



$$V = \frac{4}{3}\pi r^3$$



$$V = \frac{1}{3}\pi r^2 h$$



$$V = \frac{1}{3}lwh$$

The sum of the degree measures of the angles in a triangle is 180.

The number of degrees of arc in a circle is 360.

The number of radians of arc in a circle is 2π .