Everything You Need to Help Achieve an Excellent Score

Accuplacer Math

Full Study Guide

Comprehensive Review + Practice Tests + Online Resources

2022

2023

✓ Recommended by Test Prep Experts

Reza Nazari

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Accuplacer Math Full Study Guide 2022 - 2023

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By

Reza Nazari

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Welcome to

ACCUPLACER Math Prep 2022

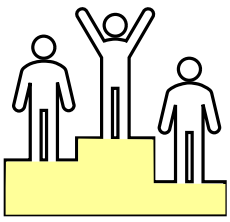


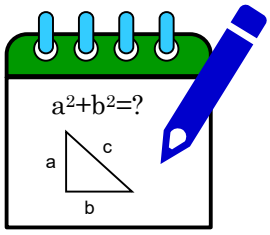


Thank you for choosing Effortless Math for your ACCUPLACER Math test preparation and congratulations on making the decision to take the ACCUPLACER test! It's a remarkable move you are taking, one that shouldn't be diminished in any capacity. That's why you need to use every tool possible to ensure you succeed on the test with the highest possible score, and this extensive study guide is one such tool.

If math has never been a strong subject for you, **don't worry**! This book will help you prepare for (and even ACE) the ACCUPLACER test's math section. As test day draws nearer, effective preparation becomes increasingly more important. Thankfully, you have this comprehensive study guide to help you get ready for the test. With this guide, you can feel confident that you will be more than ready for the ACCUPLACER Math test when the time comes.

First and foremost, it is important to note that this book is a study guide and not a textbook. It is best read from cover to cover. Every lesson of this "self-guided math book" was carefully developed to ensure that you are making the most effective use of your time while preparing for the test. This up-to-date guide reflects the 2022 test guidelines and will put you on the right track to hone your math skills, overcome exam anxiety, and boost your confidence, so that you can have your best to succeed on the ACCUPLACER Math test.



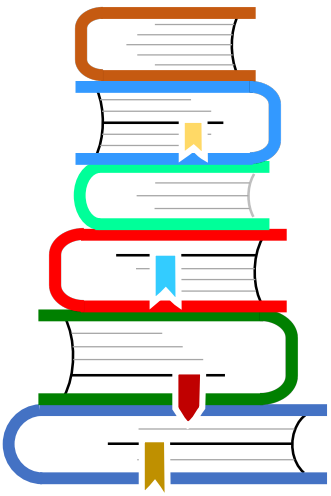


This study guide will:

- ☑ Explain the format of the ACCUPLACER Math test.
- ☑ Describe specific test-taking strategies that you can use on the test.
- ☑ Provide ACCUPLACER Math test-taking tips.
- ☑ Review all ACCUPLACER Math concepts and topics you will be tested on.
- ☑ Help you identify the areas in which you need to concentrate your study time.
- ☑ Offer exercises that help you develop the basic math skills you will learn in each section.
- ☑ Give **2 realistic and full-length practice tests** (featuring new question types) with detailed answers to help you measure your exam readiness and build confidence.

This resource contains everything you will ever need to succeed on the ACCUPLACER Math test. You'll get in-depth instructions on every math topic as well as tips and techniques on how to answer each question type. You'll also get plenty of practice questions to boost your test-taking confidence.

In addition, in the following pages you'll find:



- **How to Use This Book Effectively** – This section provides you with step-by-step instructions on how to get the most out of this comprehensive study guide.
- **How to study for the ACCUPLACER Math Test** – A six-step study program has been developed to help you make the best use of this book and prepare for your ACCUPLACER Math test. Here you'll find tips and strategies to guide your study program and help you understand ACCUPLACER Math and how to ace the test.

- **ACCUPLACER Math Review** – Learn everything you need to know about the ACCUPLACER Math test.
- **ACCUPLACER Math Test-Taking Strategies** – Learn how to effectively put these recommended test-taking techniques into use for improving your ACCUPLACER Math score.
- **Test Day Tips** – Review these tips to make sure you will do your best when the big day comes.

Effortless Math's ACCUPLACER Online Center

Effortless Math Online ACCUPLACER Center offers a complete study program, including the following:

- ✓ Step-by-step instructions on how to prepare for the ACCUPLACER Math test
- ✓ Numerous ACCUPLACER Math worksheets to help you measure your math skills
- ✓ Complete list of ACCUPLACER Math formulas
- ✓ Video lessons for all ACCUPLACER Math topics
- ✓ Full-length ACCUPLACER Math practice tests
- ✓ And much more…

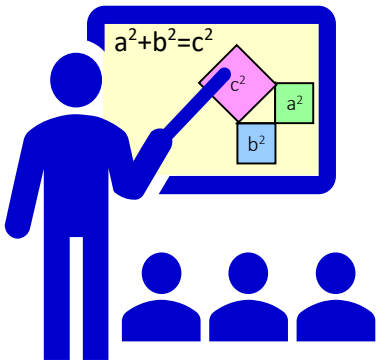
No Registration Required.

Visit **EffortlessMath.com/Accuplacer** to find your online ACCUPLACER Math resources.

How to Use This Book Effectively

Look no further when you need a study guide to improve your math skills to succeed on the math portion of the ACCUPLACER test. Each chapter of this comprehensive guide to the ACCUPLACER Math will provide you with the knowledge, tools, and understanding needed for every topic covered on the test.

It's imperative that you understand each topic before moving onto another one, as that's the way to guarantee your success. Each chapter provides you with examples and a step-by-step guide of every concept to better understand the content that will be on the test. To get the best possible results from this book:



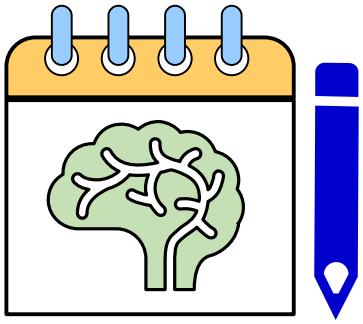
- **Begin studying long before your test date**. This provides you ample time to learn the different math concepts. The earlier you begin studying for the test, the sharper your skills will be. Do not procrastinate! Provide yourself with plenty of time to learn the concepts and feel comfortable that you understand them when your test date arrives.
- **Practice consistently**. Study ACCUPLACER Math concepts at least 20 to 30 minutes a day. Remember, slow and steady wins the race, which can be applied to preparing for the ACCUPLACER Math test. Instead of cramming to tackle everything at once, be patient and learn the math topics in short bursts.
- Whenever you get a math problem wrong, **mark it off, and review it later** to make sure you understand the concept.
- Start each session by **looking over the previous material.**
- Once you've reviewed the book's lessons, **take a practice test at the back of the book** to gauge your level of readiness. Then, review your results. Read detailed answers and solutions for each question you missed.
- **Take another practice test** to get an idea of how ready you are to take the actual exam. Taking the practice tests will give you the confidence you need on test day. Simulate the ACCUPLACER testing environment by sitting in a quiet room free from distraction. Make sure to clock yourself with a timer.

How to Study for the ACCUPLACER Math Test

Studying for the ACCUPLACER Math test can be a really daunting and boring task. What's the best way to go about it? Is there a certain study method that works better than others? Well, studying for the ACCUPLACER Math can be done effectively. The following six-step program has been designed to make preparing for the ACCUPLACER Math test more efficient and less overwhelming.

Step 1 - Create a study plan
Step 2 - Choose your study resources
Step 3 - Review, Learn, Practice
Step 4 - Learn and practice test-taking strategies
Step 5 - Learn the ACCUPLACER Test format and take practice tests
Step 6 - Analyze your performance

Step 1: Create a Study Plan



It's always easier to get things done when you have a plan. Creating a study plan for the ACCUPLACER Math test can help you to stay on track with your studies. It's important to sit down and prepare a study plan with what works with your life, work, and any other obligations you may have. Devote enough time each day to studying. It's also a great idea to break down each section of the exam into blocks and study one concept at a time.

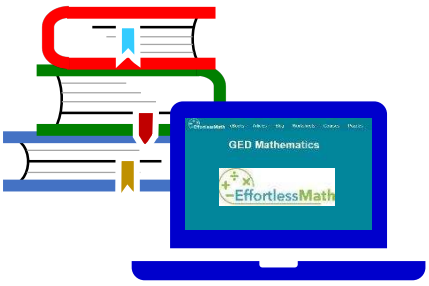
It's important to understand that there is no "right" way to create a study plan. Your study plan will be personalized based on your specific needs and learning style.

Follow these guidelines to create an effective study plan for your ACCUPLACER Math test:

- ★ **Analyze your learning style and study habits** – Everyone has a different learning style. It is essential to embrace your individuality and the unique way you learn. Think about what works and what doesn't work for you. Do you prefer ACCUPLACER Math prep books or a combination of textbooks and video lessons? Does it work better for you if you study every night for thirty minutes or is it more effective to study in the morning before going to work?
- ★ **Evaluate your schedule** – Review your current schedule and find out how much time you can consistently devote to ACCUPLACER Math study.

- ★ **Develop a schedule** – Now it's time to add your study schedule to your calendar like any other obligation. Schedule time for study, practice, and review. Plan out which topic you will study on which day to ensure that you're devoting enough time to each concept. Develop a study plan that is mindful, realistic, and flexible.
- ★ **Stick to your schedule** – A study plan is only effective when it is followed consistently. You should try to develop a study plan that you can follow for the length of your study program.
- ★ **Evaluate your study plan and adjust as needed** – Sometimes you need to adjust your plan when you have new commitments. Check in with yourself regularly to make sure that you're not falling behind in your study plan. Remember, the most important thing is sticking to your plan. Your study plan is all about helping you be more productive. If you find that your study plan is not as effective as you want, don't get discourage. It's okay to make changes as you figure out what works best for you.

STEP 2: Choose Your Study Resources

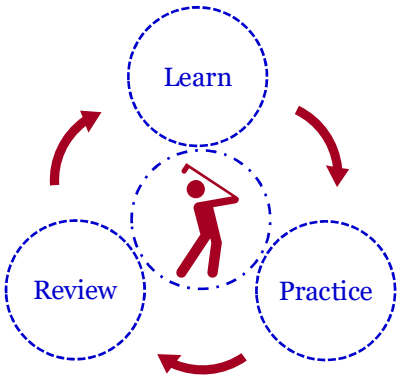


There are numerous textbooks and online resources available for the ACCUPLACER Math test, and it may not be clear where to begin. Don't worry! This study guide provides everything you need to fully prepare for your ACCUPLACER Math test. In addition to the book content, you can also use Effortless Math's online resources. (video lessons, worksheets, formulas, etc.)

Simply visit EffortlessMath.com/Accuplacer to find your online ACCUPLACER Math resources.

STEP 3: Review, Learn, Practice

This ACCUPLACER Math study guide breaks down each subject into specific skills or content areas. For instance, the percent concept is separated into different topics–percent calculation, percent increase and decrease, percent problems, etc. Use this book to help you go over all key math concepts and topics on the ACCUPLACER Math test.

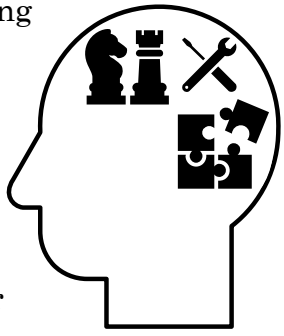


As you read each chapter, take notes or highlight the concepts you would like to go over again in the future. If you're unfamiliar with a topic or something is difficult for you, do additional research on it. For each math topic, plenty of instructions, step-by-step guides, and examples are provided to ensure you get a good grasp of the material. You can also find video lessons on the Effortless Math website for each ACCUPLACER Math concept.

Quickly review the topics you do understand to get a brush-up of the material. Be sure to do the practice questions provided at the end of every chapter to measure your understanding of the concepts.

STEP 4: Learn and Practice Test-taking Strategies

In the following sections, you will find important test-taking strategies and tips that can help you earn extra points. You'll learn how to think strategically and when to guess if you don't know the answer to a question. Using ACCUPLACER Math test-taking strategies and tips can help you raise your score and do well on the test. Apply test taking strategies on the practice tests to help you boost your confidence.



STEP 5: Learn the ACCUPLACER Test Format and Take Practice Tests



The *ACCUPLACER Test Review* section provides information about the structure of the ACCUPLACER test. Read this section to learn more about the ACCUPLACER test structure, different test sections, the number of questions in each section, and the section time limits. When you have a prior understanding of the test format and different types of ACCUPLACER Math questions, you'll feel more confident when you take the actual exam.

Once you have read through the instructions and lessons and feel like you are ready to go – take advantage of both of the full-length ACCUPLACER Math practice tests available in this study guide. Use the practice tests to sharpen your skills and build confidence.

The ACCUPLACER Math practice tests offered at the end of the book are formatted similarly to the actual ACCUPLACER Math test. When you take each practice test, try to simulate actual testing conditions. To take the practice tests, sit in a quiet space, time yourself, and work through as many of the questions as time allows. The practice tests are followed by detailed answer explanations to help you find your weak areas, learn from your mistakes, and raise your ACCUPLACER Math score.

STEP 6: Analyze Your Performance



After taking the practice tests, look over the answer keys and explanations to learn which questions you answered correctly and which you did not. Never be discourage if you make a few mistakes. See them as a learning opportunity. This will highlight your strengths and weaknesses.

You can use the results to determine if you need additional practice or if you are ready to take the actual ACCUPLACER Math test.

Looking for more?

Visit EffortlessMath.com/Accuplacer to find hundreds of ACCUPLACER Math worksheets, video tutorials, practice tests, ACCUPLACER Math formulas, and much more.

Or scan this QR code.

No Registration Required.

ACCUPLACER Test Review

The ACCUPLACER test is an assessment system for measuring students' readiness for college courses in reading, writing, and mathematics. The test is a multiple–choice format and is used to precisely placing you at the correct level of introductory classes.

The Next-Generation ACCUPLACER uses the computer–adaptive technology and the questions you see are based on your skill level. Your response to each question drives the difficulty level of the next question.

There are five sub sections on the ACCUPLACER test:

- Arithmetic (20 questions)
- Quantitative Reasoning, Algebra, And Statistics (QAS) (20 questions)
- Advanced Algebra and Functions (20 questions)
- Reading (20 questions)
- Writing (25 questions)

ACCUPLACER does NOT permit the use of personal calculators on the Math portion of placement test. ACCUPLACER expects students to be able to answer certain questions without the assistance of a calculator. Therefore, they provide an onscreen calculator for students to use on some questions.

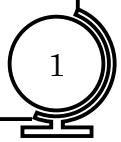
CHAPTER

1 Fractions and Mixed Numbers

Math topics that you'll learn in this chapter:



- ✓ Simplifying Fractions
- ✓ Adding and Subtracting Fractions
- ✓ Multiplying and Dividing Fractions
- ✓ Adding Mixed Numbers
- ✓ Subtracting Mixed Numbers
- ✓ Multiplying Mixed Numbers
- ✓ Dividing Mixed Numbers



Topic	Simplifying Fractions	
Notes	✓ Evenly divide both the top and bottom of the fraction by $2, 3, 5, 7,$ ... etc. ✓ Continue until you can't go any further.	
Example	***Simplify*** $\frac{72}{96}$ To simplify $\frac{72}{96}$, find a number that both 72 and 96 are divisible by. Both are divisible by 24. Then: $\frac{72}{96} = \frac{72\div24}{96\div24} = \frac{3}{4}$	
Your Turn!	1) $\frac{4}{12} =$	2) $\frac{11}{44} =$
	3) $\frac{13}{39} =$	4) $\frac{12}{48} =$
	5) $\frac{14}{63} =$	6) $\frac{20}{120} =$
	7) $\frac{27}{72} =$	8) $\frac{36}{96} =$
Find more at bit.ly/3nOGNko	9) $\frac{35}{65} =$	10) $\frac{36}{88} =$

Topic	Adding and Subtracting Fractions	
Notes	✓ For "like" fractions (fractions with the same denominator), add or subtract the numerators and write the answer over the common denominator. ✓ Find equivalent fractions with the same denominator before you can add or subtract fractions with different denominators. ✓ Adding and Subtracting with the same denominator: $\frac{a}{b}+\frac{c}{b}=\frac{a+c}{b}, \frac{a}{b}-\frac{c}{b}=\frac{a-c}{b}$ ✓ Adding and Subtracting fractions with different denominators: $\frac{a}{b}+\frac{c}{d}=\frac{ad+bc}{bd}, \frac{a}{b}-\frac{c}{d}=\frac{ad-bc}{bd}$	
Example	***Find the sum***. $\frac{1}{3}+\frac{2}{5}=$ For "unlike" fractions, find equivalent fractions with the same denominator before you can add fractions with different denominators. Use this formula: $\frac{a}{b}+\frac{c}{b}=\frac{a+c}{b} \rightarrow \frac{(5)(1)+(3)(2)}{3\times5}=\frac{11}{15}$ ***Subtract***. $\frac{6}{5}-\frac{3}{5}$ For like fractions, subtract and write the answer over the common denominator: $\frac{6-3}{5}=\frac{3}{5}$	
Your Turn! **Find more at** bit.ly/3nKet2X	1) $\frac{2}{7}+\frac{3}{7}=$	2) $\frac{7}{8}-\frac{1}{4}=$
	3) $\frac{4}{5}+\frac{1}{9}=$	4) $\frac{3}{7}-\frac{1}{4}=$
	5) $\frac{2}{9}+\frac{3}{4}=$	6) $\frac{5}{6}-\frac{2}{5}=$
	7) $\frac{1}{3}+\frac{3}{8}=$	8) $\frac{9}{11}-\frac{2}{3}=$

Topic	Multiplying and Dividing Fractions	
Notes	✓ Multiplying fractions: multiply the top numbers and multiply the bottom numbers. ✓ Dividing fractions: Keep, Change, Flip Keep first fraction, change division sign to multiplication, and flip the numerator and denominator of the second fraction. Then, solve!	
Examples	***Multiply***. $\frac{2}{7} \times \frac{1}{6} =$ Multiply the top numbers and multiply the bottom numbers. $\frac{2}{7} \times \frac{1}{6} = \frac{2\times1}{7\times6} = \frac{2}{42}$, simplify: $\frac{2}{42} = \frac{2\div2}{42\div2} = \frac{1}{21}$ ***Divide***. $\frac{2}{6} \div \frac{2}{3} =$ Keep first fraction, change division sign to multiplication, and flip the numerator and denominator of the second fraction. Then: $\frac{2}{6} \div \frac{2}{3} = \frac{2}{6} \times \frac{3}{2} = \frac{2\times3}{6\times2} = \frac{6\div6}{12\div6} = \frac{1}{2}$	
Your Turn! **Find more at** bit.ly/3haSiQW	1) $\frac{3}{4} \times \frac{2}{3} =$	2) $\frac{3}{8} \div \frac{2}{3} =$
	3) $\frac{3}{8} \times \frac{4}{5} =$	4) $\frac{4}{5} \div \frac{4}{15} =$
	5) $\frac{1}{8} \times \frac{3}{7} =$	6) $\frac{5}{9} \div \frac{4}{7} =$
	7) $\frac{2}{15} \times \frac{3}{8} =$	8) $\frac{1}{9} \div \frac{5}{6} =$

Topic	Adding Mixed Numbers	
Notes	Use the following steps for adding mixed numbers. ✓ Add whole numbers of the mixed numbers. ✓ Add the fractions of each mixed number. ✓ Find the Least Common Denominator (LCD) if necessary. ✓ Add whole numbers and fractions. ✓ Write your answer in lowest terms.	
Example	***Add mixed numbers***. $1\frac{1}{2}+2\frac{2}{3}=$ Rewriting our equation with parts separated, $1+\frac{1}{2}+2+\frac{2}{3}$ Add whole numbers: $1+2=3$ Add fractions: $\frac{1}{2}+\frac{2}{3}=\frac{3}{6}+\frac{4}{6}=\frac{7}{6}=1\frac{1}{6}$, Now, combine the whole and fraction parts: $3+1+\frac{1}{6}=4\frac{1}{6}$	
Your Turn! **Find more at** bit.ly/2M4oABB	1) $9\frac{1}{2}+5\frac{3}{4}=$	2) $4\frac{3}{2}+2\frac{1}{6}=$
	3) $6\frac{3}{4}+3\frac{5}{28}=$	4) $4\frac{2}{5}+6\frac{2}{4}=$
	5) $4\frac{6}{7}+5\frac{3}{5}=$	6) $3\frac{1}{6}+1\frac{2}{7}=$
	7) $4\frac{5}{9}+2\frac{2}{7}=$	8) $7\frac{1}{9}+5\frac{2}{6}=$

Topic	Subtracting Mixed Numbers	
Notes	Use the following steps for subtracting mixed numbers. ✓ Convert mixed numbers into improper fractions. $a\frac{c}{b}=\frac{ab+c}{b}$ ✓ Find equivalent fractions with the same denominator for unlike fractions (fractions with different denominators) ✓ Subtract the second fraction from the first one. ✓ Write your answer in lowest terms and convert it into a mixed number if the answer is an improper fraction.	
Example	***Subtract***. $9\frac{1}{2}-5\frac{1}{4}=$ Convert mixed numbers into fractions: $9\frac{1}{2}=\frac{9\times2+1}{2}=\frac{19}{2}$ and $5\frac{1}{4}=\frac{5\times4+1}{4}=\frac{21}{4}$, these two fractions are "unlike" fractions. (they have different denominators). Find equivalent fractions with the same denominator. Use this formula: $\frac{a}{b}-\frac{c}{d}=\frac{ad-bc}{bd}$ $\frac{19}{2}-\frac{21}{4}=\frac{(19)(4)-(21)(2)}{2\times4}=\frac{76-42}{8}=\frac{34}{8}$, the answer is an improper fraction, convert it into a mixed number. $\frac{34}{8}=4\frac{2}{8}=4\frac{1}{4}$	
Your Turn! **Find more at** bit.ly/3aD3KDG	1) $3\frac{3}{4}-1\frac{1}{2}=$	2) $2\frac{4}{9}-1\frac{2}{3}=$
	3) $5\frac{1}{6}-2\frac{5}{12}=$	4) $5\frac{1}{3}-1\frac{3}{4}=$
	5) $4\frac{5}{6}-1\frac{1}{8}=$	6) $7\frac{3}{4}-1\frac{2}{3}=$
	7) $9\frac{5}{6}-5\frac{1}{5}=$	8) $4\frac{1}{4}-3\frac{7}{9}=$