

MATH 190 A,B,C

Basic Mathematics

Study Guide

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This Study Guide coordinates with *Math Skills – Arithmetic with Introductory Algebra and Geometry*, 7th ed Kendall/Hunt Publishing, by Ronald Staszko.

INTRODUCTION

MATH190A, MATH190B, and MATH190C are one-unit, self-paced courses in basic mathematics. MATH190A reviews the arithmetic of whole numbers, fractions, and decimals. MATH190B covers ratios, percents, and measurement systems. MATH190C introduces algebra and geometry. MATH190A,B,C is equivalent to the three unit lecture course MATH190. A C-grade in Math190C fulfills the pre-requisite for Algebra I (MATH151, MATH151A). Depending on the results of Math Assessment Tests and discussions with your counselor and/or instructor, you will be advised which of the classes, Math190A,B,C, to take.

THREE UNITS OF CREDIT

The three classes offer a comprehensive review of basic math skills.

1. MATH190A – Whole Numbers, Fractions, Decimal – 1 unit
2. MATH190B – Ratios, Proportions, Percents, Measurement – 1 unit
3. MATH190C – Introductory Algebra and Geometry – 1 unit

The materials needed for the class are a) the textbook, *Math Skills*, 7th ed., b) the *Math Skills Tutor CD-ROM* (packaged with the textbook), and c) the *Math 190A,B,C Study Guide*. These can be found in the campus bookstore and the *Study Guide* is available on the Ohlone College math Department website.

It is the hope of the Math Department that having three separate classes will give you increased flexibility in developing your math skills. We hope that this program will take some of the anxiety out of learning mathematics and enable you to have a successful and enjoyable experience. Even if you have had difficulty with math in the past, we are confident that you can master the content of these classes if you keep a positive attitude and work at it earnestly. Please feel free to see your instructor about any aspect of the class.

FEATURES OF MATH 190A,B,C

1. **Diagnostic Testing:** The Counseling Department administers Math Assessment Tests to students to assess their math skills. The results of these tests and discussions with counseling staff are used to determine which of these three classes you should take.
2. **Self-Paced:** You can proceed through each course at the pace necessary for you to understand the material. To complete all three classes in one semester you should follow the time schedule given to you at the first class meeting. *Self-paced does not mean no pace*. If you are not making progress, your instructor will encourage you to make a greater effort.
3. **Mastery Oriented:** In this course, you must score at least 70% on a chapter test before you can proceed to the next chapter. If you master the concepts in one chapter, you will find that it will be easier to understand topics in the next chapters.
4. **Individual Tutoring:** Your instructor and student tutors will be available in the classroom to help you during the scheduled class hours. Assistance will also be available in Math Learning Center (MLC) during open hours. Check this semester's MLC schedule.

5. **Textbook:** The text for the class, *Math Skills*, 7th edition, has been written with you in mind. In each unit/chapter, there is a statement of the objectives for the unit/chapter. The explanations are readable and concise. The text contains lots of examples, solved problems, exercises, pretests, chapter tests, unit tests, and a final exam for you to evaluate your understanding of the material. The text's Answer Section contains all the answers to exercises and tests along with selected solutions for you to check your work. *Math Skills* also contains *Brain Busters* to challenge your math skills, *Blasts from the Past* to give you a glimpse of math in 1887, *Math Magic* to provide you with some recreational mathematics, and *Expand Your Learning* problems that combine skills or go beyond what is in the text.
6. **Computer Assisted Instruction:** You will be required to complete some assignments contained on the Math Skills Tutor (MST) CD. Since it is included with your textbook, you can do these assignments on your own computer. You can also do these assignments on the computers in the classroom or Math Learning Center. The tutorial programs in the MST software will help reinforce your understanding of the topics covered in the course and help prepare you for tests.
7. **Individualized Study:** In MATH190A,B,C, you work independently on the math skills that you need to master. The instructor, tutors, textbook, and the computer software are there to assist you. Do not be afraid to ask for help when you need it.
8. **Use of Calculators:** In improving your math skills, you will develop your understanding of the processes of mathematics and your ability to do computation. Thus, in MATH190A you will **not** be allowed to use a calculator. In MATH190B and MATH190C, you may use a calculator. Each instructor has his/her policy on how the calculator will be integrated MATH190A,B,C. *Please check with your instructor.*

GENERAL POLICIES AND PROCEDURES

1. TESTING AND GRADING

a. Chapter Tests

At the end of each assigned chapter, you will be given a test which will be graded according to the following scale:

<u>% Correct</u>	<u>Grade</u>
90 – 100	A
80 – 89	B
70 – 79	C
Below 70	Not passing. You will be assigned supplementary work to complete before being retested on the chapter.

b. Final Exams

To get credit for each class, you need to take the final exam for the course. Final exams in this class can only be taken once, so you should be well prepared before you take them. The textbook and MST software have sample exams for you to practice before taking the actual final exams.

c. **Grades**

Your grade for each unit will be determined by the following: 50% - chapter tests, 25% - final exam, and 25% textbook and computer assignments.

2. ATTENDANCE

You are required to report each week to your assigned classroom for the three hours that the class is scheduled to meet. Attendance/sign-in procedures will be explained on the first class. Remember, according to school policy, if you miss 2 weeks worth of classes, you may be dropped from the class.

3. HOMEWORK

To complete the assignments for the class, you will have to do some of the work outside of the scheduled class times. Assignments must be turned in at the end of each chapter before tests will be administered. Be sure to check your answers against those in the Answer Section of the text. If you have any problem with the assignments, please ask for help from your instructor, tutors, or Math Learning Center staff.

4. PROCEDURE FOR COMPLETING A CHAPTER

- a. Read and study the textual material for each section. Pay close attention to the worked out examples and problems.
- b. Do the odd numbered exercises for Set A as indicated in the assignments for each chapter (see pages that follow). Check your answers in the text's Answer Section. If any answers are incorrect, determine the error by resolving the problem, studying the selected solutions in the Answer Section, rereading the text, getting help from a tutor or your instructor, etc. You can also do the corresponding numbered problem from Set B to check if you have mastered the material.
- c. Do all assigned computer work.
- d. When you have finished all the assignments from each section of the chapter, study the summary materials at the end of the chapter, solve the Chapter Cross Number Review, and take the practice test at the end of the chapter. See a tutor or your instructor for help on any problems you did not understand in that practice test.
- e. Turn in the assignments for the chapter. Ask your instructor for the test for the chapter.
- f. If you obtain a grade of 70% or better, you can go on to the next chapter or prepare for one of the final exams as your progress warrants. If you do not obtain at least a 70% grade, you must complete a test retake assignment and take another test on that chapter.

5. ASSIGNMENT SHEETS

The textbook and computer assignments for each chapter covered in the Math190A,B,C courses along with details about final exams are given on the pages that follow.

MATH190A

CHAPTER 1: Addition, Multiplication, Powers, Square Roots

<u>DATE COMPLETED</u>	<u>STUDY SECTION</u>	<u>ASSIGNMENTS</u>
1. _____	1.1	Exercise 1.1 Set A Odd Problems
2. _____	1.2	Exercise 1.2 Set A Odd Problems
3. _____	<i>MST1A</i>	COMPUTER: Reading & Rounding Off Whole Numbers
4. _____	1.3	Self Drill in Addition
5. _____	1.4	Exercise 1.4 Set A Odd Problems
6. _____	1.5	Self Drill in Multiplication
7. _____	<i>MST1B</i>	COMPUTER: Basic Facts in Addition & Multiplication
8. _____	1.6	Exercise 1.6 Set A Odd Problems
9. _____	1.7	Exercise 1.7 Set A Odd Problems
10. _____	1.8	Exercise 1.8 Set A Odd Problems
11. _____	<i>MST1C</i>	COMPUTER: Advanced Work: Addition & Multiplication
12. _____	1.9	Exercise 1.9 Set A Odd Problems
13. _____	1.10	Exercise 1.10 Set A Odd Problems
14. _____	<i>MST1D</i>	COMPUTER: Applications: Addition & Multiplication
15. _____	Summary	Chapter 1 <i>Cross Number Review</i>
16. _____		Chapter 1 Practice Test A All Problems
17. _____		Take the test for Chapter 1. See instructor.

CHAPTER 2: Subtraction, Division, Order of Operations

<u>DATE COMPLETED</u>	<u>STUDY SECTION</u>	<u>ASSIGNMENTS</u>
1. _____	2.1	Self Drill in Subtraction
2. _____	2.2	Exercise 2.2 Set A Odd Problems
3. _____	2.3	Exercise 2.3 Set A Odd Problems
4. _____	<i>MST2A</i>	COMPUTER: Basic Facts in Subtraction & Division
5. _____	2.4	Exercise 2.4 Set A Odd Problems
6. _____	2.5	Exercise 2.5 Set A Odd Problems
7. _____	2.6	Exercise 2.6 Set A Odd Problems
8. _____	2.7	Exercise 2.7 Set A Odd Problems
9. _____	<i>MST2B</i>	COMPUTER: Advanced Work: Subtraction & Division
10. _____	2.8	Exercise 2.8 Set A Odd Problems
11. _____	<i>MST2C</i>	COMPUTER: The Order of Operations (<i>PEMDAS</i>)
12. _____	2.9	Exercise 2.9 Set A Odd Problems
13. _____	2.10	Exercise 2.10 Set A Odd Problems
14. _____	<i>MST2D</i>	COMPUTER: Applications: Subtraction & Division
15. _____	Summary	Chapter 2 <i>Cross Number Review</i>
16. _____		Chapter 2 Practice Test A All Problems
17. _____		Take the test for Chapter 2. See instructor.

CHAPTER 3: Fractions

<u>DATE COMPLETED</u>	<u>STUDY SECTION</u>	<u>ASSIGNMENTS</u>
1. _____	3.1	Exercise 3.1 Set A Odd Problems
2. _____	3.2	Exercise 3.2 Set A Odd Problems
3. _____	<i>MST3A</i>	COMPUTER: Reducing Fractions
4. _____	3.3	Exercise 3.3 Set A Odd Problems
5. _____	3.4	Exercise 3.4 Set A Odd Problems
6. _____	3.5	Exercise 3.5 Set A Odd Problems
7. _____	<i>MST3B</i>	COMPUTER: Multiplying and Dividing Fractions
8. _____	3.6	Exercise 3.6 Set A Odd Problems
9. _____	3.7	Exercise 3.7 Set A Odd Problems
10. _____	3.8	Exercise 3.8 Set A Odd Problems
11. _____	3.9	Exercise 3.9 Set A Odd Problems
12. _____	3.10	Exercise 3.10 Set A Odd Problems
13. _____	<i>MST3C</i>	COMPUTER: Finding the Least Common Denominator
14. _____	<i>MST3D</i>	COMPUTER: Adding & Subtracting Fractions
15. _____	3.11	Exercise 3.11 Set A Odd Problems
16. _____	3.12	Exercise 3.12 Set A Odd Problems
17. _____	<i>MST3E</i>	COMPUTER: Working with Mixed Numbers
18. _____	3.13	Exercise 3.13 Set A Odd Problems
19. _____	3.14	Exercise 3.14 Set A Odd Problems
20. _____	<i>MST3F</i>	COMPUTER: Applications: Fractions
21. _____	Summary	Chapter 3 <i>Cross Number Review</i>
22. _____		Chapter 3 Practice Test A All Problems
23. _____		Take the test for Chapter 3. See instructor.

CHAPTER 4: Decimals

<u>DATE COMPLETED</u>	<u>STUDY SECTION</u>	<u>ASSIGNMENTS</u>
1. _____	4.1	Exercise 4.1 Set A Odd Problems
2. _____	4.2	Exercise 4.2 Set A Odd Problems
3. _____	<i>MST4A</i>	COMPUTER: Rounding Off Decimals
4. _____	4.3	Exercise 4.3 Set A Odd Problems
5. _____	4.4	Exercise 4.4 Set A Odd Problems
6. _____	4.5	Exercise 4.5 Set A Odd Problems
7. _____	4.6	Exercise 4.6 Set A Odd Problems
8. _____	4.7	Exercise 4.7 Set A Odd Problems
9. _____	4.8	Exercise 4.8 Set A Odd Problems
10. _____	4.9	Exercise 4.9 Set A Odd Problems
11. _____	<i>MST4B</i>	COMPUTER: Changing Between Fractions & Decimals
12. _____	4.10	Exercise 4.10 Set A Odd Problems
13. _____	4.11	Exercise 4.11 Set A Odd Problems
14. _____	4.12	Exercise 4.12 Set A Odd Problems
15. _____	<i>MST4C</i>	COMPUTER: Applications: Decimals
17. _____	Summary	Chapter 4 <i>Cross Number Review</i>
18. _____		Chapter 4 Practice Test A All Problems
19. _____		Take the test for Chapter 4. See instructor.

FINAL EXAM: MATH190A

By passing the chapter tests for Chapters 1, 2, 3, and 4, you have covered the subject matter for MATH190A. You now need to take the first final exam that will cover the material from those four chapters. The one unit of semester credit for MATH190A will only be given if the final exam is taken. **The final exam may be taken only once**, so make sure you are ready before you attempt it. In the textbook, there are practice Unit Exams at the end of Unit I and Unit II and Form B of Chapter Practice Tests that you can take to review the material covered on this final exam. There is also a sample final exam for Chapters 1-4 in the *MST* computer software (FINAL1) that you can use to prepare for the actual final exam. If you find problems that you can not solve while preparing for the final exam, be sure to get help from one of the tutors or your instructor.

After taking the final exam for MATH190A, go on to the assignments from Chapter 5.

USE OF CALCULATORS

At this point in the Basic Mathematics Class, you should have competence in operating with whole numbers, fractions, and decimals. In the remaining chapters, you will be using those skills to solve other types of math problems. For these chapters you may use a calculator to obtain your answers. The use of a calculator will speed up computation time and give more time to study the methods and processes needed to obtain correct solutions. All you need is a simple four-function calculator. See one of the tutors or your instructor if you need instructions on how to use a calculator or if you want some advice on what calculator to purchase.

Remember, in the remaining chapters you will be striving to understand how to apply the processes you learned in the first four chapters. The calculator can do the computation for you and give you the opportunity to concentrate on understanding how to apply your math skills.

Note: *See your instructor for his/her policy on using calculators on tests.*

MATH 190B

CHAPTER 5: Ratio, Proportion, Percent

<u>DATE COMPLETED</u>	<u>STUDY SECTION</u>	<u>ASSIGNMENTS</u>
1. _____	5.1	Exercise 5.1 Set A Odd Problems
2. _____	5.2	Exercise 5.2 Set A Odd Problems
3. _____	5.3	Exercise 5.3 Set A Odd Problems
4. _____	<i>MST5A</i>	COMPUTER: Solving Proportions
5. _____	5.4	Exercise 5.4 Set A Odd Problems
6. _____	5.5	Exercise 5.5 Set A Odd Problems
7. _____	5.6	Exercise 5.6 Set A Odd Problems
8. _____	<i>MST5B</i>	COMPUTER: Changing Percents, Decimals, Fractions
9. _____	5.7	Exercise 5.7 Set A Odd Problems
10. _____	5.8	Exercise 5.8 Set A Odd Problems
11. _____	<i>MST5C</i>	COMPUTER: Percentage Problems
12. _____	5.9	Exercise 5.9 Set A Odd Problems
13. _____	5.10	Exercise 5.10 Set A Odd Problems
14. _____	<i>MST5D</i>	COMPUTER: Applications: Proportions and Percents
15. _____	Summary	Chapter 5 <i>Cross Number Review</i>
16. _____		Chapter 5 Practice Test A All Problems
17. _____		Take the test for Chapter 5. See instructor.

CHAPTER 6: Measurement and Statistics

<u>DATE COMPLETED</u>	<u>STUDY SECTION</u>	<u>ASSIGNMENTS</u>
1. _____	6.1	Exercise 6.1 Set A Odd Problems
2. _____	6.2	Exercise 6.2 Set A Odd Problems
3. _____	6.3	Exercise 6.3 Set A Odd Problems
4. _____	6.4	Exercise 6.4 Set A Odd Problems
5. _____	6.5	Exercise 6.5 Set A Odd Problems
6. _____	<i>MST6A</i>	COMPUTER: Measurement Conversions
7. _____	6.6	Exercise 6.6 Set A Odd Problems <i>(You don't need to memorize the conversion facts in this section.)</i>
8. _____	6.7	Exercise 6.7 Set A Odd Problems
9. _____	6.8	Exercise 6.8 Set A Odd Problems
10. _____	<i>MST6B</i>	COMPUTER: Reading Graphs
11. _____	6.9	Exercise 6.9 Set A Odd Problems
12. _____	6.10	Exercise 6.10 Set A Odd Problems
13. _____	<i>MST6C</i>	COMPUTER: Applications: Measurement & Statistics
14. _____	Summary	Chapter 6 <i>Cross Number Review</i>
15. _____		Chapter 6 Practice Test A All Problems
16. _____		Take the test for Chapter 6. See instructor.

FINAL EXAM: MATH190B

By passing the chapter tests for Chapters 5 and 6, you have covered the subject matter for MATH190B. You now need to take the final exam that will cover the material from those two chapters. The one unit of semester credit for MATH190B will only be given if the final exam is taken. **The final exam may be taken only once**, so make sure you are ready before you attempt it. In the textbook, you will find a practice Unit Exam at the end of Unit III and Form B of Chapter Practice Tests that you can take to review the material covered on this final exam. There is also a sample final exam for Chapters 5-6 in the *MST* computer software (FINAL2) that you can use to prepare for the actual final exam. If you find problems that you can not solve while preparing for the final exam, be sure to get help from one of the tutors or your instructor.

MATH190C

CHAPTER 7: Introductory Algebra

<u>DATE COMPLETED</u>	<u>STUDY SECTION</u>	<u>ASSIGNMENTS</u>
1. _____	7.1	Exercise 7.1 Set A Odd Problems
2. _____	7.2	Exercise 7.2 Set A Odd Problems
3. _____	7.3	Exercise 7.3 Set A Odd Problems
4. _____	7.4	Exercise 7.4 Set A Odd Problems
5. _____	7.5	Exercise 7.5 Set A Odd Problems
6. _____	<i>MST7A</i>	COMPUTER: Operating With Signed Numbers
7. _____	7.6	Exercise 7.6 Set A Odd Problems
8. _____	7.7	Exercise 7.7 Set A Odd Problems
9. _____	7.8	Exercise 7.8 Set A Odd Problems
10. _____	7.9	Exercise 7.9 Set A Odd Problems
11. _____	7.10	Exercise 7.10 Set A Odd Problems
12. _____	<i>MST7B</i>	COMPUTER: Solving Equations
13. _____	7.11	Exercise 7.11 Set A Odd Problems
14. _____	7.12	Exercise 7.12 Set A Odd Problems
15. _____	7.13	Exercise 7.13 Set A Odd Problems
16. _____	7.14	Exercise 7.14 Set A Odd Problems
17. _____	<i>MST7C</i>	COMPUTER: Equations and Word Problems
18. _____	7.15	Exercise 7.15 Set A Odd Problems
19. _____	<i>MST7D</i>	COMPUTER: Exponents and Scientific Notation
20. _____	Summary	Chapter 7 <i>Cross Number Review</i>
21. _____		Chapter 7 Practice Test A All Problems
22. _____		Take the test for Chapter 7. See instructor.

CHAPTER 8: Introductory Geometry

<u>DATE COMPLETED</u>	<u>STUDY SECTION</u>	<u>ASSIGNMENTS</u>
1. _____	8.1	Exercise 8.1 Set A Odd Problems
2. _____	8.2	Exercise 8.2 Set A Odd Problems
3. _____	8.3	Exercise 8.3 Set A Odd Problems
4. _____	8.4	Exercise 8.4 Set A Odd Problems
5. _____	8.5	Exercise 8.5 Set A Odd Problems
6. _____	<i>MST8A</i>	COMPUTER: Lines, Angles, and Polygons
7. _____	8.6	Exercise 8.6 Set A Odd Problems
8. _____	<i>MST8B</i>	COMPUTER: Perimeters and Areas
9. _____	8.7	Exercise 8.7 Set A Odd Problems
10. _____	8.8	Exercise 8.8 Set A Odd Problems
11. _____	<i>MST8C</i>	COMPUTER: Surface Areas, Volumes, Pythagorean Th.
12. _____	8.9	Exercise 8.9 Set A Odd Problems
13. _____	Summary	Chapter 8 <i>Cross Number Review</i>
14. _____		Chapter 8 Practice Test A All Problems
15. _____		Take the test for Chapter 8. See instructor.

FINAL EXAM: MATH190C

By passing the chapter tests for Chapters 7 and 8, you have covered the subject matter for MATH190C. You now need to take the third final exam that will cover the material from those two chapters. The one unit of semester credit for MATH190C will only be given if the final exam is taken. **The final exam may be taken only once**, so make sure you are ready before you attempt it. In the textbook, you will find practice Unit Exam at the end of Unit IV and Form B of Chapter Practice Tests that you can take to review the material covered on this final exam. There is also a sample final exam for Chapters 7-8 in the *MST* computer software (FINAL3) that you can use to prepare for the actual final exam. If you find problems that you can not solve while preparing for the final exam, be sure to get help from one of the tutors or your instructor.

After taking the final exam for MATH190C, you should be ready for a beginning algebra course (MATH151 or Math 151A). If you want to test your knowledge of the math skills covered in all three courses, MATH190A,B,C, there is a comprehensive final exam before the Answer Section in the textbook for you to take and correct. We hope that you have enjoyed developing your math skills and wish you continued success.