**Preparing For Algebra and Statistics**

*(Third Edition)*

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**Introduction** This book was written to combine arithmetic and pre-algebra in order to prepare students for algebra and statistics pathways. The goal of the book is to prepare students not only for beginning algebra (algebra I) courses, but also to prepare students for pre-statistics courses. It was written for students and is for educational use only. This book is not meant to teach someone a concept from scratch, but instead to remind students of material they hopefully have seen before in previous math courses and merely forgotten. Students are welcome to use the digital version of the book on their computer or e-reader, but the book can also be printed and written in. Every section has completed examples as well as example problems to work out with their instructor. Students should take notes in the open regions that say “Do this example with your instructor.” Therefore the book is more of a “workbook” than a textbook and should be used in conjunction with taking a pre-algebra level course. Because the book also prepares students for pre-stat courses, there are quite a few statistics applications and formulas throughout the book. If you are not familiar with some of the letters we use in statistics formulas, here are some of the common ones.

*z* : “z-score” (Used for comparing quantities in statistics.)

 : Greek letter “mu”. (Used to represent a population mean average.)

 : “x-bar” (Used to represent the mean average of sample data.)

 : Greek letter “sigma”. (Used to represent a population standard deviation.)

 : (Used to represent the standard deviation of sample data.)

*p* : (Used to represent a population percentage.)

 : “p – hat” (Used to represent a percentage of sample data.)

**Special Note for Teachers**

I hope this book is useful for you and your students. As I stated above, this book is a resource for the students but should be used in conjunction with receiving instruction from their pre-algebra teacher. I believe that students never learn well from a textbook alone. They need the help and support of a great teacher. Besides having completed examples and explanations of concepts, the book also has space for “instructor examples”, where I want the students to complete the example problem with their teacher and take notes. They will receive better explanation from their teacher than I could ever give in a textbook. Teaching is an art that is incredibly difficult and not always appreciated. I solute your passion and dedication to your students. That is where the real learning begins.  
  
Matt Teachout

Notes about the 3rd edition

After using the 2nd edition of *Preparing for Algebra and Statistics* in the fall semester of 2015 and the spring semester of 2016, COC pre-algebra instructors made changes in order to better serve their students. This new 3rd edition is very similar to the 2nd edition. Changes include a new section on calculating basic statistics (section 2G), a new section on inequalities (section 5G), and bar graphs and pie charts have been added to the section on percentages (section 6B). The 3rd edition also has longer homework sets and answer keys to odd problems in appendix A. Thanks to all of the COC pre-algebra and pre-statistics instructors who contributed during the fall 2015 and spring 2016 semesters.

Notes about OER and Creative Commons Licensing

Many college students across the country struggle to balance work and family with their education. One of the biggest road-blocks to many students is the cost of textbooks. At our college, a significant percentage of students cannot afford the cost of textbooks and chose to attend classes without purchasing a book or materials needed for the class. It goes without saying that this is a major impediment to passing their classes, but the students have no choice. They simply cannot afford $150-$200 textbooks. For this reason, I believe strongly in open educational resources (OER). Open source materials like this book are available and are virtually free for students.

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