

[INTRODUCTORY ALGEBRA EXAM I REVIEW TOPICS]

(use this to make sure you are ready)

Below are the topics we have covered in the course so far listed by chapter. Any of these topics may show up on the exam.

(chapter 1) – Introduction of Modeling

(1.1) – Variables and Constants (page 1)

- Know what a variable is
- Know what a constant is
- Know how to plot numbers on a number line
- Know how to find and plot the average on a number line

(1.2) – Scattergrams (page 12)

- Know how to plot data on a Cartesian coordinate system (make a scattergram)
- Know how to plot ordered pairs on a Cartesian coordinate system
- Be able to read bar graphs
- Be able to determine independent vs. dependent variables

(1.3) – Exact linear relationships (page 24)

- Know how to find exact linear models and know what it means what it means to be linearly related
- Know how to estimate values based on an exact linear model (including x and y intercepts)
- **Be comfortable with word problems involving sketching scattergrams, drawing linear models, and estimating values, then interpreting results.**

(1.4) – Approximate linear relationships (page 34)

- Know how to find approximate linear models and know what it means what it means to be linearly related
- Know how to estimate values based on an approximate linear model (including x and y intercepts)
- **Be comfortable with word problems involving sketching scattergrams, drawing linear models, and estimating values, then interpreting results.**
- Understand the difference between interpolation and extrapolation
- Be able to determine where “model breakdown” occurs
- Know how to modify a model (like example 5 on page 39)

(chapter 2) – Linear Functions and Equations

(2.1) – Expressions (page 54)

- Know how to write mathematical expressions based on English sentences
- Know what an expression is

(2.2) – Operations with Fractions (page 62)

- This section will no show up on the exam, you are tested on operations of fractions on the skills test, so I will omit it on this particular exam.

(2.3) – Adding real numbers (page 72)

- Know how to find the opposite of a number
- Know what the absolute value of a number is

(2.4) – Change in a quantity (page 80)

- Know how to find and analyze the amount of change in a quantity

(2.5) – Ratios and Percents (page 90)

- Know how to set up ratios and calculate the unit ratio
- **Be able to find the percents of quantities (i.e. find 6% of 3000 students, etc...)**
- Know how to calculate debt payments using percents
- Be able to make predictions based on ratios (using proportions)

(2.6) – Exponents and Order of Operations (page 101)

- Know what an exponent is
- Be able to evaluate expressions (ex: evaluate $b^2 + 4a$ for $b = -7, a = 2$)

(Additional Thoughts)

There is only 50 minutes to take the first exam – so clearly I won't be able to put ALL of the stuff on this review on the exam itself. As for review/practice problems, I am going to mostly leave that up to you. In the past I have made review assignments, but ultimately I am never able to make a "one-size-fits-all" review, mostly due to the fact that it's impossible to even do that – everyone will need to review different things. Therefore, I want you to go through this sheet and determine what the things you need to work on are. At the end of each section in the book there are problems you can do for practice (and yes we've done some of them before as homework, but it's always good to review problems we've done). Know that I'm not going to throw any curve balls on the exam; there won't be a question on the exam that we haven't gone over in class.