Adult Basic Education
Level II Mathematics

Mathematics 2020
Algebra Readiness II

Study Guide

Level II Mathematics Courses
Mathematics 2011: Whole Numbers
Mathematics 2012: Fractions
Mathematics 2013: Decimals
Mathematics 2014: Percents
Mathematics 2015: Interest
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Newfoundland
Labrador

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Who should do Mathematics 2020: Algebra Readiness II?
Mathematics 2019: Algebra Readiness I and **Mathematics 2020: Algebra Readiness II** are both required if you plan on studying Degree and Technical Profile Mathematics (Academic) or Business-Related College Profile Mathematics (Academic) in Level III. **Mathematics 2019** is a pre-requisite for **Mathematics 2020**. These two courses are more challenging and have more content than the other ABE Level II Mathematics courses. These two courses are optional if you plan on studying General College Profile Mathematics (General) in Level III. This course focuses on perimeter, area, volume, equations, integers, exponents and linear functions.

You do not have to complete all the Level II Mathematics courses to move into ABE Level III. The decision to do all or some of the Level II Mathematics courses will be made based on your instructor's assessment. The following will be taken into consideration in this assessment: your previous education, your CAAT (or another standardized test) result, your work experience, your future employment/post-secondary goals, your progress in Level II courses, or any other factor impacting your future success in Level III. For example, if you wish to pursue the Degree and Technical Profile (Academic) in Level III, you will likely have to complete all Level II Mathematics courses. If you intend to pursue the General College Profile (General) in Level III, you may only have to complete a selection of Level II Mathematics courses.

What is the Mathematics 2020 Study Guide?
The Study Guide describes all the work that is required for the completion of this course. It also contains references and notes to help you.

How should I Use the Study Guide?
Before beginning to do the work in this Study Guide, you will need to talk to your instructor about the course and the resources you will need. You should work through the Study Guide page by page, consulting with your instructor as you go.

How is the Study Guide organized?
The Study Guide is organized in two columns, as follows:

Required Work	**Suggested Resources/Notes**
This column provides a numbered list of all the work you are required to do for the course.	This column gives important information on the resources being used and some notes to help you complete the required work.

Important Notes
This Study Guide is intended to make it possible for you to work independently in Adult
Basic Education. If you use the Study Guide correctly, you may be able to work on your
own for certain periods of time. You should always make sure that your instructor is
aware of what you are doing. Feel free to ask your instructor for help and guidance at all
times.

You should complete all the **Required Work** in this study guide without a calculator. A
calculator can be used to check your answers, but it should not be used to simply
complete the **Required Work** faster.

Unit 1: Perimeter, Area and Volume

Required Work	Suggested Resources/Notes
1. Read Lesson 1 on page 159 in the text, and then complete numbers 1-3 (all items).	• Pi can be expressed as 22/7, 3 1/7 or 3.14.
2. Read Lesson 2 on page 160 in the text, and then complete numbers 1-7 (all items).	• Think: How do you find the circumference of a circle given the diameter or the radius?
3. Read Lesson 3 on page 161 in the text, and then complete numbers 1-9 (all items).	
4. Read Lesson 4 on page 162 in the text, and then complete numbers 1-9 (all items).	• Remember that when dealing with area, the answer is always given in square units.
5. Read Lesson 5 on page 163 in the text, and then complete the following: a) Numbers 1-7 (all items) b) Solve each word problem on page 164.	• Remember you divide the diameter by 2 to get the radius. • Ask your instructor for help if you do not fully understand each word problem. • It may be helpful to draw a diagram for each word problem before doing calculations.

Unit 1: Perimeter, Area and Volume

Required Work	Suggested Resources/Notes
6. Read Lesson 6 on page 165 in the text, and then complete numbers 1-8 (all items). 7. Read Lesson 7 on page 166 in the text, and then complete numbers 1-5 (all items). 8. Read Lesson 8 on page 167 in the text, and then complete numbers 1-2 (all items). 9. Read Lesson 9 on page 168 in the text, and then complete numbers 1-7 (all items). 10. Read Lesson 10 on page 169, and then complete numbers 1-7 (all items).	• Remember: it's always the height, not a side, that is multiplied by the base. • Think: what are some practical applications for finding the surface area of a rectangular solid? • Think: what are some practical applications for finding the surface area of a triangular prism? • You may need to review the rules for multiplying decimals. • Remember: when dealing with volume, the answer is always given in cubic units.

Unit 1: Perimeter, Area and Volume

Required Work	Suggested Resources/Notes

11. Read Lesson 11 on page 170 in the text, and then complete numbers 1-3 (all items).
 	
12. Read Lesson 12 on page 171 in the text, and then complete the following:
 	
    a) Numbers 1-7 (all items)
 	
    b) Solve each word problem on page 172.
 	
13. Read Lesson 13 on page 173, and then complete numbers 1-7 (all items).
 	
14. Read Lesson 14 on page 174, and then complete numbers 1-7 (all items).
	• Ask your instructor for help if you do not fully understand each word problem.
	
	• It may be helpful to draw a diagram for each word problem before doing calculations.
	
	• Remember: square the radius when finding the volume of a cone.
	
	• Remember: multiply by 1\3 when finding the volume of a pyramid.

Unit 1: Perimeter, Area and Volume

Required Work	Suggested Resources/Notes
15. <u>Assignment #1</u>: Complete all items and word problems in Lesson 15 on pages 175-176. This assignment will be graded and is part of the official evaluation for the course. 16. <u>Unit 1 Review</u>: Complete all items in the *Chapter 11 Practice Test* on page 177. This is the review for the <u>Unit 1 Test.</u> 17. <u>Unit 1 Test</u>: Write the test for **Unit 1: Perimeter, Area and Volume**.	• You should show all your calculations on the assignment. You may use a calculator to check your answers. Ask your instructor if you need any help with the assignment. • Your instructor may require you to complete additional work if you do not get a satisfactory grade on <u>Assignment #1.</u> • Only write the <u>Unit 1 Test</u> if you fully understand the material contained in the review.

Unit 2: Equations and Integers

Required Work	Suggested Resources/Notes
1. Read page 239 in the text, and then complete numbers 1-11 (all items). 2. Read page 240 in the text, and then complete numbers 1-8 (all items). 3. Read page 241 in the text, and then complete numbers 1-11 (all items). 4. Read page 242 in the text, and then complete numbers 1-12 (all items). 5. Read page 243 in the text, and then complete numbers 1-11 (all items). 6. Read page 244 in the text, and then complete numbers 1-10 (all items). 7. Read page 245 in the text, and then complete numbers 1-11 (all items). 8. Read page 246 in the text, and then complete numbers 1-10 (all items). 9. Read page 247 in the text, and then complete numbers 1-10 (all items). 10. Read page 248 in the text, and then complete numbers 1-6 (all items). 11. Read page 249 in the text, and then complete numbers 1-7 (all items). 12. Read page 250 in the text, and then complete numbers 1-10 (all items). 13. Read page 251 in the text, and then complete numbers 1-10 (all items).	• **BEDMAS** is a helpful acronym to remember the Order of Operations (Brackets, Exponents, Division/ Multiplication, Addition/ Subtraction). • Ask your instructor for help if you do not fully understand each word problem. • It may be helpful to draw a diagram for each word problem before doing calculations.

Unit 2: Equations and Integers

Required Work	Suggested Resources/Notes
14. Read page 252 in the text, and then complete numbers 1-11 (all items). 15. <u>Assignment #2</u>: Complete the assignment provided by your instructor. This assignment will be graded and is part of the official evaluation for this course. This assignment is also the review for the <u>Unit 2 Test</u>. 16. <u>Unit 2 Test</u>: Write the test for **Unit 2 Equations and Integers**.	• You should show all your calculations on the assignment. You may use a calculator to check your answers. Ask your instructor if you need any help with the assignment. • Your instructor may require you to complete additional work if you do not get a satisfactory grade on <u>Assignment #2.</u> • Only write the <u>Unit 2 Test</u> if you fully understand the material contained in the review.

Unit 3: Exponents and Linear Functions

Required Work	Suggested Resources/Notes
1. Read page 253 in the text, and then complete numbers 1-11 (all items). 2. Read page 254 in the text, and then complete numbers 1-10 (all items). 3. Read page 255 in the text, and then complete numbers 1-12 (all items). 4. Read page 256 in the text, and then complete numbers 1-10 (all items). 5. Read page 257 in the text, and then complete numbers 1-12 (all items). 6. Read page 258 in the text, and then complete numbers 1-10 (all items). 7. Read page 259 in the text, and then complete numbers 1-3 (all items). 8. Read page 260 in the text, and then complete numbers 1-2 (all items). 9. Read page 261 in the text, and then complete numbers 1-3 (all items). 10. Read page 262 in the text, and then complete numbers 1-2 (all items).	• Remember: the laws of multiplying and dividing exponents with the same bases. • Remember: when graphing on the coordinate grid, always start with the x coordinate first and then do the y coordinate. • Remember: the slope-intercept form of a linear equation—$y = mx + b$. The m = the slope and the b = the y-intercept.

Unit 3: Exponents and Linear Functions

Required Work	Suggested Resources/Notes
11. <u>Assignment #3:</u> Complete the assignment provided by your instructor. This assignment will be graded and is part of the official evaluation for this course. This assignment will also be the review for the <u>Unit 3 Test</u>. 12. <u>Unit 3 Test</u>: Write the test for **Unit 3: Exponents and Linear Functions**. You have completed three assignments and three unit tests in this course. Your instructor will inform you if you need to write a final exam for this course.	• You should show all your calculations on the assignment. You may use a calculator to check your answers. Ask your instructor if you need any help with the assignment. • Your instructor may require you to complete additional work if you do not get a satisfactory grade on <u>Assignment #3.</u> • Only write the <u>Unit 3 Test</u> if you fully understand the material contained in the review.