

Adult Basic Education

Level II Mathematics

Mathematics 2017 Geometry

Study Guide

Suggested Resource: *Prism Math Blue Student Workbook (Canadian Edition). McGraw-Hill Ryerson. 2005. ISBN 13: 978-0-07-096033-6 (10:0-07-096033-X).*

Level II Mathematics Courses

Mathematics 2011: Whole Numbers

Mathematics 2012: Fractions

Mathematics 2013: Decimals

Mathematics 2014: Percents

Mathematics 2015: Interest

Mathematics 2016: Measurement

Mathematics 2017: Geometry

Mathematics 2018: Statistics and Probability

Mathematics 2019: Algebra Readiness I

Mathematics 2020: Algebra Readiness II



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To the Student

Who should do Mathematics 2017: Geometry?

You should do this course if you need extra practice related to lines, angles and figures, as well as calculating perimeter, area and volume.

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 2017 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.

To the Student

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: Lines, Angles and Figures

Required Work	Suggested Resources/Notes
<p>1. Read Lesson 1 on page 157 of the text, and then complete numbers 1-8 (all items).</p> <p>2. Read Lesson 2 on page 158 of the text, and then complete numbers 1-7.</p> <p>3. Read Lesson 3 on page 159 of the text, and then complete numbers 1-3 (all items).</p> <p>4. Read Lesson 4 on page 160 of the text, and then complete numbers 1-10.</p> <p>5. Read Lesson 5 on page 161 of the text, and then complete numbers 1-7.</p>	<ul style="list-style-type: none">• Think: Name three examples of line segments in the real-world. • Think: Why, when naming lines and line segments, does it make no difference in which order the points are named? • Think: Why, when naming an angle, is the common endpoint always named by the middle letter? • Think: List three examples of right, acute, and obtuse angles in real-life. • Think: List three real-life examples of intersecting lines and parallel lines. • Think: Can lines intersect at more than one point? Why/why not?

Unit 1: Lines, Angles and Figures

Required Work	Suggested Resources/Notes
<p>6. Read Lesson 6 on page 162 of the text, and then complete numbers 1-12.</p> <p>7. Read Lesson 7 on page 163 of the text, and then complete numbers 1-3 (all items).</p> <p>8. Read Lesson 8 on page 164 of the text, and then complete numbers 1-3 (all items).</p> <p>9. Read Lesson 9 on page 165 of the text, and then complete numbers 1-3 (all items).</p>	<ul style="list-style-type: none">• Think: Draw three parallel lines cut by a transversal. Identify the corresponding angles.• Think: Give three real-life examples of right angles.• Understand that right angles can be formed by rays, line segments and lines.• Think: Locate streets forming right, acute and obtuse angles on a map.• Think: How do you decide whether an angle is acute, right or obtuse.

Unit 1: Lines, Angles and Figures

Required Work	Suggested Resources/Notes
<p>10. Read Lesson 10 on page 166 of the text, and then complete numbers 1-3 (all items).</p> <p>11. Read Lesson 11 on page 167 of the text, and then complete numbers 1-4.</p> <p>12. Read Lesson 12 on page 168 of the text, and then complete numbers 1-3 (all items).</p> <p>13. <u>Assignment #1</u>: Complete the <i>Chapter 10 Practice Test</i> on page 169 of the text. 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 1 Test</u>.</p> <p>14. <u>Unit 1 Test</u>: Write the test for Unit 1: Lines, Angles and Figures.</p>	<ul style="list-style-type: none">• Think: What does it mean to say “the sides of a triangle are congruent”?• Think: Guess and check the sum of the angles of a pentagon. You can check using a protractor.• 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: Perimeter, Area and Volume

Required Work	Suggested Resources/Notes
<p>1. Read Lesson 1 on page 171 of the text, and then complete the following:</p> <ul style="list-style-type: none">a) Numbers 1-7 (all items)b) Solve each word problem on page 172. <p>2. Read Lesson 2 on page 173 of the text, and then complete the following:</p> <ul style="list-style-type: none">a) Numbers 1-8 (all items)b) Solve each word problem on page 174. <p>3. Read Lesson 3 on page 175 of the text, and then complete the following:</p> <ul style="list-style-type: none">a) Numbers 1-12b) Solve each word problem on page 176.	<ul style="list-style-type: none">• Think: Estimate or measure the perimeter of your home.• 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.• How is the radius of a circle related to the diameter?• Think: Why might it be easier to use $\frac{22}{7}$ for π in some problems and 3.14 for π in other problems?• Think: What are the steps for finding the diameter or radius of a circle given the circumference?

Unit 2: Perimeter, Area and Volume

Required Work	Suggested Resources/Notes
<p>4. Read Lesson 4 on page 177 of the text, and then complete the following:</p> <ul style="list-style-type: none">a) Numbers 1-7 (all items)b) Solve each word problem on page 178. <p>5. Read Lesson 5 on page 179 of the text, and then complete the following:</p> <ul style="list-style-type: none">a) Numbers 1-7 (all items)b) Solve each word problem on page 180. <p>6. Read Lesson 6 on page 181 of the text, and then complete the following:</p> <ul style="list-style-type: none">a) Numbers 1-7 (all items)b) Solve each word problem on page 182.	<ul style="list-style-type: none">• Think: What is the area of your home? You can measure to find the area of each room in your home.• Why, when finding the area of a square, can you use the formula $s \times s$?• Remember to divide by 2 after multiplying the base by the height when calculating the area of triangles.• Remember to multiply the radius by itself ($r \times r$) when calculating the area of circles.• Think: Why, when the diameter is given, you must divide by 2 to get the radius?

Unit 2: Perimeter, Area and Volume

Required Work	Suggested Resources/Notes
<p>7. Read Lesson 7 on page 183 of the text, and then complete the following:</p> <ul style="list-style-type: none">a) Numbers 1-4 (all items)b) Solve each word problem on page 184. <p>8. Read Lesson 8 on page 185 of the text, and then complete numbers 1-7.</p> <p>9. Continue with Lesson 8 on page 186 of the text, and then complete numbers 1-5.</p> <p>10. <u>Assignment #2</u>: Complete the <i>Chapter 11 Practice Test</i> on page 187 of the text. This assignment will be graded and is part of the official evaluation for this course. This assignment will also be part of the review for the <u>Unit 2 Test</u> later in the course.</p> <p>11. Read Lesson 1 on page 189 of the text, and then complete the following:</p> <ul style="list-style-type: none">a) Numbers 1-6 (all items)b) Solve each word problem on page 190.	<ul style="list-style-type: none">• Remember to add the different areas of the figures together.• You can add dimensions together to get those dimensions not shown in the diagrams.• You must calculate the area of all faces of the figures to find surface area.• 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>.

Unit 2: Perimeter, Area and Volume

Required Work	Suggested Resources/Notes
<p>12. Read Lesson 2 on page 191 of the text, and then complete the following:</p> <ul style="list-style-type: none">a) Numbers 1-2 (all items)b) Solve each word problem on page 192. <p>13. Read Lesson 3 on page 193 of the text, and then complete the following:</p> <ul style="list-style-type: none">a) Numbers 1-6 (all items)b) Solve each word problem on page 194. <p>14. <u>Assignment #3</u>: Complete the <i>Chapter 12 Practice Test</i> on page 195 of the text. This assignment will be graded and is part of the official evaluation for this course. This assignment will also be part of the review for the <u>Unit 2 Test</u> later in the course.</p> <p>15. <u>Unit 2 Test</u>: Write the test for Unit 2: Perimeter, Area and Volume. This test will be similar to Assignment #2 and Assignment #3.</p> <p>You have completed three assignments and two unit tests in this course. Your instructor will inform you if you have to write a final exam.</p>	<ul style="list-style-type: none">• Only write the <u>Unit 2 Test</u> later in the course if you fully understand the material contained in the review.• Think: When using the formula $V=Bxh$, find the area of the triangle (B) and then multiply by the height.• 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 2 Test</u> if you fully understand the material contained in the review.