ALBERTA DISTANCE LEARNING CENTRE
Mathematics 10C
MAT1791
Workbook 5.1

Student's Questions and Comments

FOR STUDENT USE ONLY
Student Name: _____

FOR ADLC USE ONLY
Assigned to _____
Marked by _____
Date received _____

Summary

	Marks Earned	Total Possible Marks	Percent
5.1 Practice – I	**I have _____ /8 and _____ %.**		
Lesson 5.1 Assignment		14	

Teacher's Comments:

_____

Teacher's Signature

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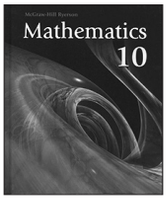

Mathematics 10

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Practice Assessment

The *Practice* section provides exercise questions and allows you to self-reflect on your conceptual understanding of the *Lesson* skills. You will mark your *Practice* work in each *Workbook* according to the following rubric.

Category	Strategy and Procedures	Response to Questions
	I have…	*I have…*
4	• used efficient and effective strategies to solve the problem(s)	• provided detailed explanations and followed directions appropriately to complete all questions
3	• used effective strategies to solve the problem(s)	• provided clear explanations and followed directions adequately to complete most questions
2	• used effective strategies inconsistently to solve the problem(s)	• provided incomplete explanations and followed some directions to complete a few questions
1	• used ineffective strategies to solve the problem(s)	• provided incomplete explanations and have not followed directions to complete some questions

Complete *Practice* exercises using your best work, showing all relevant steps needed to arrive at your solution. Refer to the *Module* to review lesson instructions. Contact your teacher for assistance or clarification as needed, or to investigate the topic further.

Check and correct your work using the solutions provided in *Appendix* in the *Module*.

Practice is worth 8 marks.

After you have assessed your work, reflect on your understanding of the concepts in the table provided at the end of each *Practice* section.

Lesson 5.1: Polynomial Multiplication

Complete the *Practice* below. When you have completed all the questions for *Lesson 5.1 Practice – I* with your best work, mark your work by first comparing your answers to the solutions provided in the *Appendix*. Then, apply the rubric found at the beginning of the *Workbook*.

Practice – I

1. Show the multiplication of $(2x - 3)(x + 2)$ using algebra tiles and symbolically. Show how the steps of the two methods correspond.

Algebra Tiles	Symbolically

2. Expand and simplify, if possible.

   a. $(1-x)(2-y)$

   b. $(n-r)(p+q)$

   c. $(3-x)^2$

   d. $(-z^2-3z+2)(1-z)$

3. Alex was asked to multiply two binomials: $(6d + 2)(7d - 5)$

   His work is shown below.

$$(6d + 2)(7d - 5) = (6d)(7d) + (2)(-5)$$
$$= 42d^2 - 10$$

   a. Alex's work is not correct. What error did he make?

   b. Write a friendly recommendation to Alex explaining a strategy he could use to improve his solution. In your explanation, suggest how he could numerically verify the product.

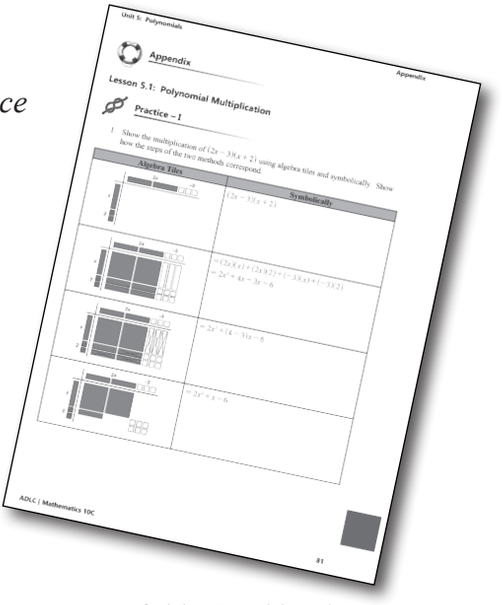
4. After a book is bound, the three free edges are cut to give the book a clean book's pages have uncut dimensions of l and w, measured in centimetres. Write a binomial multiplication and its product to represent the finished area of a page if 0.75 cm is cut from each free edge.

Mark your work for *Lesson 5.1 Practice – I* using the solutions provided in the *Appendix*. Then, apply the rubric found at the beginning of the *Workbook*.

Transfer your self-assessed mark to the front cover of the *Workbook*.

My self-assessed mark on *Lesson 5.1 Practice – I* is _____.

Reflect on your understanding of the concepts addressed in the *Practice* exercises in the table provided.


Unit 5: Polynomials

Appendix

Appendix

Lesson 5.1: Polynomial Multiplication

Practice – I

1. Show the multiplication of $(2x - 3)(x + 2)$ using algebra tiles and symbolically. Show how the steps of the two methods correspond.

Algebra Tiles

Symbolically

$(2x - 3)(x + 2)$

$= (2x)(x) + (2x)(2) + (-3)(x) + (-3)(2)$

$= 2x^2 + 4x - 3x - 6$

$= 2x^2 + (4 - 3)x - 6$

$= 2x^2 + x - 6$

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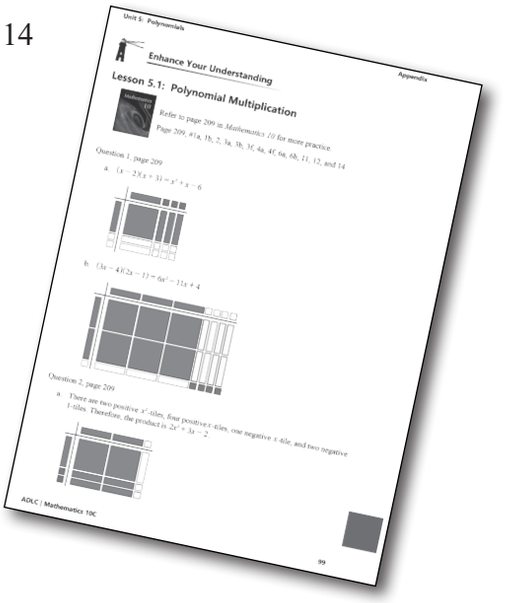
Question Number	Got it!	Almost there…	Need to retry or ask for help.
1			
2			
3			
4			

You may proceed to *Explore Your Understanding Assignment* on the next page of this *Workbook*.

Note: Before you complete *Explore Your Understanding*, you may review your skills and get more practice by completing the following problems in *Mathematics 10*.

- Page 209, #1a, 1b, 2, 3a, 3b, 3f, 4a, 4f, 6a, 6b, 11, 12, and 14

Check your work in *Enhance Your Understanding*.


Unit 5: Polynomials

Enhance Your Understanding

Appendix

Lesson 5.1: Polynomial Multiplication

Refer to page 209 in *Mathematics 10* for more practice.

Page 209, #1a, 1b, 2, 3a, 3b, 3f, 4a, 4f, 6a, 6b, 11, 12, and 14

Question 1, page 209

a. $(x - 2)(x + 3) = x^2 + x - 6$

b. $(3x - 4)(2x - 1) = 6x^2 - 11x + 4$

Question 2, page 209

a. There are two positive x^2-tiles, four positive x-tiles, one negative x-tile, and two negative 1-tiles. Therefore, the product is $2x^2 + 3x - 2$.

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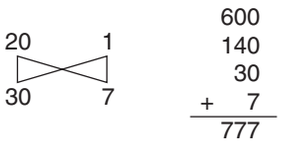
Lesson 5.1: Polynomial Multiplication

Explore Your Understanding Assignment

1. The following diagram shows the 'bowtie' method of multiplying two digit numbers. The example demonstrates $21 \times 37 = 777$. (Hint: $21 \times 37 = (20 + 1)(30 + 7)$)



(1) a. Explain how the bowtie method is used to multiply two digit numbers.

(2) b. Show that the bowtie method can be used to multiply $(2x - 27)(-x + 15)$.

2. Expand and simplify, if possible.

(1) a. $(x+1)(x+2)$

(1) b. $(x-2y)(y-3x)$

(1) c. $(2p+3)(p^2-4p-7)$

(2) 3. Choose values for a and b and use them to verify the product shown.

$(5a+b)(a-6b) = 5a^2 - 29ab - 6b^2$

(2) 4. Denise has multiplied $(2r-3)(2r+3)$ to get $4r^2-9$. After looking at her work, Hyder says her solution must be incorrect because multiplying two binomials will always produce a trinomial. Which student is correct? Explain the error to the incorrect student.

5. The total area of a picture and its frame can be represented by $(l+2f)(w+2f)$, where l and w represent the length and width of the picture, respectively, and f represents the thickness of the frame.

(1) a. Sketch a diagram to represent this scenario.

(1) b. What binomial multiplication represents the area of an $8" \times 12"$ picture and its frame?

(1) c. Multiply the binomials from b., and combine like terms to simplify.

(1) d. What is the total area of an $8" \times 12"$ picture and its frame if the frame is $1.5"$ thick?

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