ALBERTA DISTANCE LEARNING CENTRE
Mathematics 10C

MAT1791

Workbook 8.4

FOR STUDENT USE ONLY

Student Name:

_____

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Assigned to

_____

Marked by

_____

Date received

_____

Summary

	Marks Earned	Total Possible Marks	Percent
8.4 Practice – V	**I have _____ /8 and _____ %.**		
Lesson 8.4 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 *I have…*	Response to Questions *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 does 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 8.4: Solving Problems Using Systems of Linear Equations

Complete the *Practice* below. When you have completed all the questions for *Lesson 8.4 Practice – V* 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*.
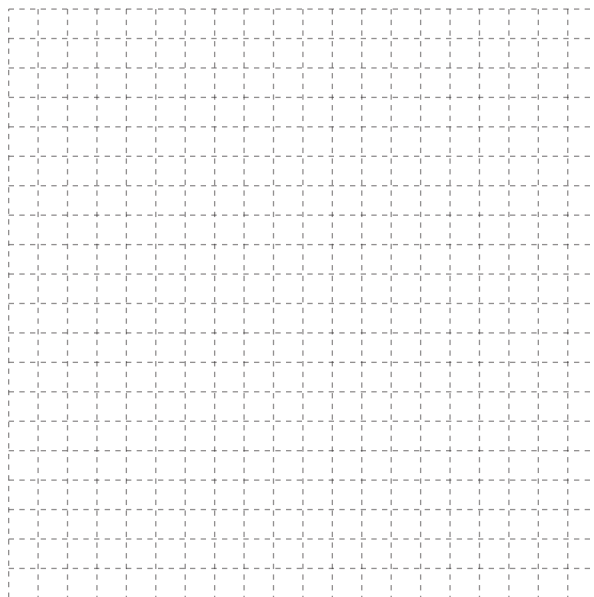
Practice – V

1. Consider the following system of equations.

    $y = 6x + 3$
    $y = -2x - 29$

    a. Solve the system by graphing, by substitution, and by elimination.

    b. Which method do you prefer for this system? Why?

    _____

    _____

2. Matt claims that if a linear system includes a vertical or a horizontal line, the best method for solving the system is usually by substitution. Do you agree with Matt? Why or why not?

_____

_____

_____

_____

3. From the table below, select the system of equations that best represents each of the following problems.

$A + B = 12$	$C = 190M$	$C = 795$	$C = 450M + 2\,000$
$A - B = 2$	$C = 120M + 3\,400$	$C = 66D$	$C = 350M + 5\,000$

a. Tyler wants to know now many days he will need to visit the ski hill for a season's pass to cost less than buying a pass for each visit.

b. Elizabeth is comparing the cost of continuing to run an old furnace with the cost of buying and running a new, high-efficiency furnace.

c. The sum and difference of two numbers is known. What are the numbers?

d. A car dealership charges a down payment and a monthly payment for someone to finance a vehicle. After how many months will a car with a large down payment and a small monthly payment cost the same as a car with a small down payment and a large monthly payment?

4. Arial has been offered two jobs. One job pays $10/h plus a commission of 2% of all sales. The other job pays $12/h plus a commission of 0.5% of all sales. How much merchandise would Arial need to sell in each 8 hour shift for the two jobs to pay the same?

    a. Write a system of equations that can be used to represent this scenario.

    b. Solve the system of equations.

    c. How much merchandise would Arial need to sell in each 8 hour shift for the two jobs to pay the same?

        _____

        _____

    d. Does the conclusion agree with the original information?

        _____

        _____

5.   When twenty identical rectangular tables are placed end-to-end, their perimeter is 326 feet. When they are placed side-by-side, their perimeter is 136 feet.

   a.   Sketch a diagram to represent this problem. (You don't need to show all 20 tables, just a pattern.)

   b.   Write a linear system to model the situation.

   c.   What are the dimensions of each table?

6. Medicine Hat and Lethbridge are 169 km apart. If Kiran leaves Medicine Hat at noon and travels towards Lethbridge at 110 km/h, and Leela leaves Lethbridge at noon and travels towards Medicine Hat at 100 km/h, when and where will the two meet?

Mark your work for *Lesson 8.4 Practice – V* 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 8.4 Practice – V* is _____.

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

| Question Number	Got it!	Almost there…	Need to retry or ask for help.
1			
2			
3			
4			
5			
6			
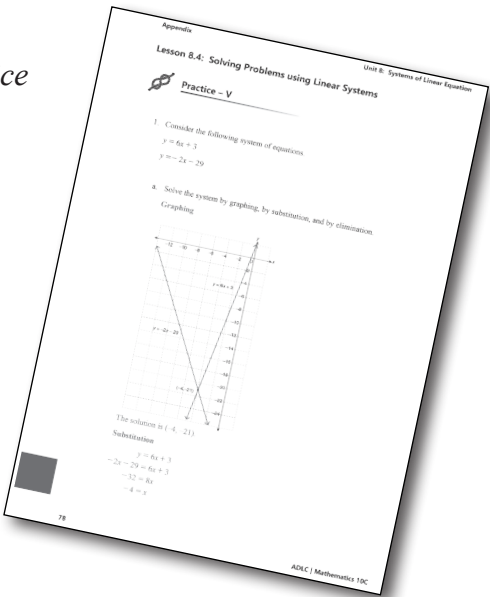
You may proceed to *Explore Your Understanding Assignment* on the next page of this *Workbook*.

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 440, #1, 2, 3, 5, and 10
- Page 498, #1, 6, 7, 8, 9, and 11

Check your work in *Enhance Your Understanding*.
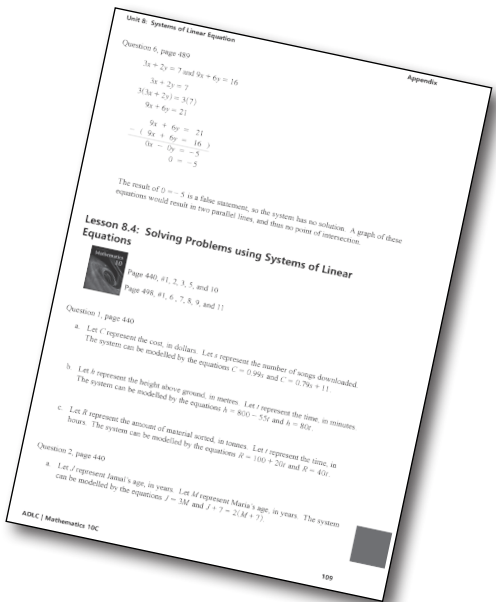
Lesson 8.4: Solving Problems Using Systems of Linear Equations

Explore Your Understanding Assignment

1. Give an example of a system of equations that would be best-solved by each method learned in this unit. Explain your choice.

   ① a. Graphing

   _____

   _____

   _____

   ① b. Substitution

   _____

   _____

   _____

   ① c. Elimination

   _____

   _____

   _____

2. Write a system of equations to model each of the following situations. You do not need to solve the systems.

① a. One website charges $0.99 per song download. Another website charges a one-time user fee of $12, but only charges $0.89 per song download.

① b. Sean operates a lawn-cutting business. He charges $15 for a single lawn and $25 for a front and back lawn. Sean made $475 from 25 customers.

① c. Brass is an alloy made by melting and mixing copper and zinc. A metallurgist has two brass alloys, one that is 65% copper and one that is 90% copper. He would like to combine a portion of each alloy to produce 500 g of a new alloy that is 75% copper.

3. For a local carnival, adult tickets cost $32 and child tickets cost $14. If 193 people attended the carnival, and they paid $4 034 altogether, how many adults and how many children were there?

①   a. Write a system of equations that can be used to represent this scenario.

②   b. Solve the system of equations.

①   c. How many adults and how many children were there?

   _____

   _____

①   d. Does the conclusion agree with the original information?

   _____

   _____

   _____

③   4.   Tanya has 44 quarters and dimes worth $8.30. How many of each type of coin does she have?

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