Practice Assessment

Practice provides practice and allows you to self-reflect on your conceptual understanding of the *Lesson* skills. You will mark your work for *Practice* 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 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 addressed in the *Practice* exercises in the table provided.

Lesson 8.4: Solving Problems Using Linear Systems

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.

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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?

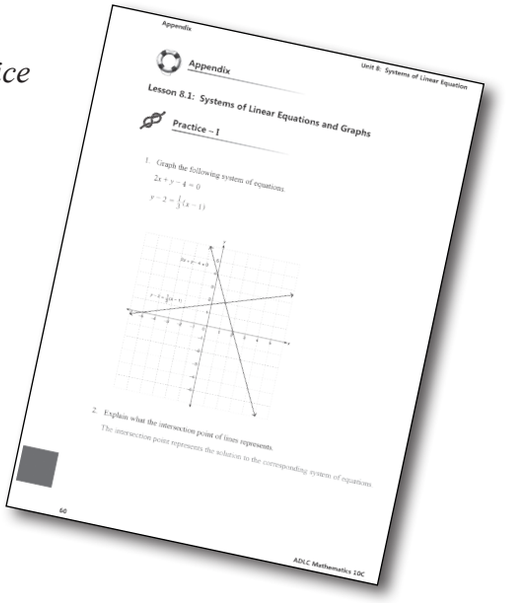
6. Medicine Hat and Lethbridge are 169 km apart. If Kiran leaves Medicine Hat at noon and travels towards Lethbridge at 110 km/h, and Leela leaves Lethbridge at noon and travels towards Medicine Hat at 100 km/h, when and where will the two meet?

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.


Appendix

Appendix

Unit 8: Systems of Linear Equation

Lesson 8.1: Systems of Linear Equations and Graphs

Practice – 1

1. Graph the following system of equations.

$2x + y - 4 = 0$

$y - 2 = \frac{1}{3}(x - 1)$

2. Explain what the intersection point of lines represents.

The intersection point represents the solution to the corresponding system of equations.

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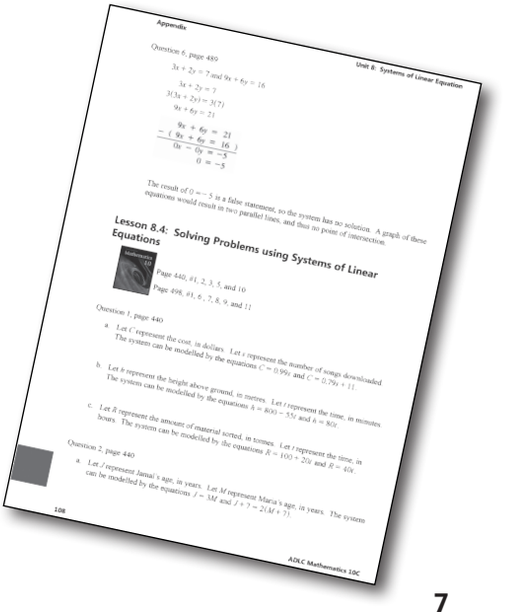
Question Number	Got it!	Almost there…	Need to retry or ask for help.
1			
2			
3			
4			
5			
6			

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*.


Appendix

Unit 8: Systems of Linear Equation

Question 6, page 480

$3x + 2y = 7$ and $9x + 6y = 16$

$3x + 2y = 7$

$3(3x + 2y) = 3(7)$

$9x + 6y = 21$

$9x + 6y = 21$

$-(9x + 6y = 16)$

$0x - 0y = -5$

$0 = -5$

The result of $0 = -5$ is a false statement, so the system has no solution. A graph of these equations would result in two parallel lines, and thus no point of intersection.

Lesson 8.4: Solving Problems using Systems of Linear Equations

Page 440, #1, 2, 3, 5, and 10

Page 498, #1, 6, 7, 8, 9, and 11

Question 1, page 440

a. Let C represent the cost, in dollars. Let x represent the number of songs downloaded. The system can be modelled by the equations $C = 0.99x$ and $C = 0.79x + 11$.

b. Let h represent the height above ground, in metres. Let t represent the time, in minutes. The system can be modelled by the equations $h = 800 - 55t$ and $h = 80t$.

c. Let R represent the amount of material sorted, in tonnes. Let t represent the time, in hours. The system can be modelled by the equations $R = 100 + 20t$ and $R = 40t$.

Question 2, page 440

a. Let J represent Jamal's age, in years. Let M represent Maria's age, in years. The system can be modelled by the equations $J = 3M$ and $J + 7 = 2(M + 7)$.

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Lesson 8.4: Solving Problems Using Linear Systems

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