ALBERTA DISTANCE LEARNING CENTRE
Mathematics 10C
MAT1791
Workbook 2.2

Student's Questions and Comments

FOR STUDENT USE ONLY
Student Name: _____

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Assigned to _____
Marked by _____
Date received _____

Summary

	Marks Earned	Total Possible Marks	Percent
2.2 Practice – III	**I have ____ /8 and ____ %.**		
Lesson 2.2 Assignment		14	

Teacher's Comments:

_____

Teacher's Signature

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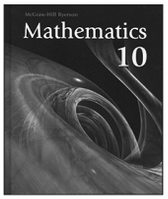

Mathematics 10

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Practice Assessment

The *Practice* section provides practice 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 2.2: Volume of 3-D Objects

Complete the *Practice* below. When you have completed all the questions for *Lesson 2.2 Practice – III* 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 – III

1. A right rectangular pyramid has base dimensions 10 ft by 4 ft, and a height of 15 ft. Determine its volume, to the nearest cubic foot.

2. A right rectangular prism with base dimensions 5.8 m by 3.1 m has a volume of 187 m^3. Determine the height of the prism, to the nearest tenth of a metre.

3. A cylindrical drum has a circumference of 47 inches and a height of 18 inches. What is the volume of the drum, to the nearest tenth of a cubic inch?

4. Explain why volume is measured in cubic units.

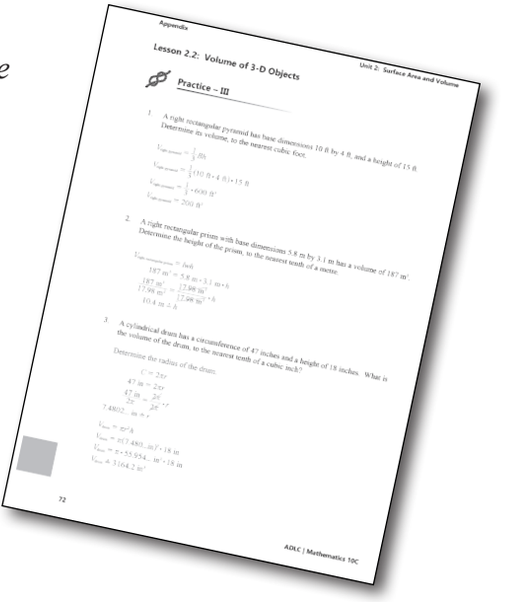
5. A beach ball holds 804 in^3 of air. Determine the diameter, to the nearest tenth, of the beach ball.

Mark your work for *Lesson 2.2 Practice – III* 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 3.2 Practice – III* is _____.

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


Appendix

Lesson 2.2: Volume of 3-D Objects

Unit 2: Surface Area and Volume

Practice – III

1. A right rectangular pyramid has base dimensions 10 ft by 4 ft, and a height of 15 ft. Determine its volume, to the nearest cubic foot.

$V_{right\ pyramid} = \frac{1}{3}lwh$

$V_{right\ pyramid} = \frac{1}{3}(10\ ft \cdot 4\ ft) \cdot 15\ ft$

$V_{right\ pyramid} = \frac{1}{3} \cdot 600\ ft^3$

$V_{right\ pyramid} = 200\ ft^3$

2. A right rectangular prism with base dimensions 5.8 m by 3.1 m has a volume of 187 m³. Determine the height of the prism, to the nearest tenth of a metre.

$V_{right\ rectangular\ prism} = lwh$

$187\ m^3 = 5.8\ m \cdot 3.1\ m \cdot h$

$\frac{187\ m^3}{17.98\ m^2} = \frac{17.98\ m^2}{17.98\ m^2} \cdot h$

$10.4\ m \approx h$

3. A cylindrical drum has a circumference of 47 inches and a height of 18 inches. What is the volume of the drum, to the nearest tenth of a cubic inch?

Determine the radius of the drum.

$C = 2\pi r$

$47\ in = 2\pi r$

$\frac{47\ in}{2\pi} = \frac{2\pi}{2\pi} r$

$7.4802\ldots\ in \approx r$

$V_{drum} = \pi r^2 h$

$V_{drum} \approx \pi(7.4802\ldots in)^2 \cdot 18\ in$

$V_{drum} \approx \pi \cdot 55.954\ldots in^2 \cdot 18\ in$

$V_{drum} \approx 3164.2\ in^3$

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

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 86, #1, 2, and 5

Check your work in *Enhance Your Understanding*.


Unit 2: Surface Area and Volume

Appendix

Question 12, page 77

To determine how much glass is needed for each of the large greenhouse, you need to find the area of the 4 sides (triangles).

$SA = 4 \cdot (\frac{1}{2}bh)$

$SA = 4 \cdot (\frac{1}{2} \cdot 26\ m \cdot 35.4\ m)$

$SA \approx 1840.8\ m^2$

Each large greenhouse needs 1841 m² of glass, rounded to the nearest square metre.

Lesson 2.2: Volume of 3-D Objects

Refer to page 86 in *Mathematics 10* for more practice.

- Page 86, #1, 2, and 5

Question 1, page 86

a. First, identify the length, width, and height. $l = 85\ cm$, $w = 68\ cm$, $h = 1\ m$. Since height is in a different unit, convert it from metres to centimeters using $1\ m = 100\ cm$. Then, find the volume using the formula.

$V_{pyramid} = \frac{1}{3}lwh$

$V_{pyramid} = \frac{1}{3} \cdot 85\ cm \cdot 68\ cm \cdot 100\ cm$

$V_{pyramid} = 192\,666.666\ldots cm^3$

The volume of the pyramid is 192 666.7 cm³ when rounded to the nearest tenth.

b. First, identify the length, width, and height. $l = 85\ cm$, $w = 68\ cm$, $h = 1\ m$. Since height is in a different unit, convert it from metres to centimeters using $1\ m = 100\ cm$. Then, find the volume using the formula.

$V_{rectangular\ prism} = lwh$

$V_{rectangular\ prism} = 85\ cm \cdot 68\ cm \cdot 100\ cm$

$V_{rectangular\ prism} = 578\,000\ cm^3$

The volume of the rectangular prism is 578 000 cm³.

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Lesson 2.2: Volume of 3-D Objects

Explore Your Understanding Assignment

(3) 1. Explain how the volume of a right cone relates to the volume of a cylinder with the same base and height. Use diagrams and volume formulas to explain the relationship.

2. Draw and label a diagram of each object and then determine the missing dimension.

(4) a. A cone has a height of 4 ft and a volume of 7.77 ft^3. Determine its radius, to the nearest tenth of a foot.

(4) b. A cylinder has a volume of 5 m^3 and a radius of 0.7 m. What is the height of the cylinder, to the nearest hundredth of a metre?

(3) 3. A microwave oven has a capacity of 1.59 ft^3. The interior of the microwave is 14 in wide and 14 in deep. What is the height of the interior of the microwave, to the nearest tenth of a foot?

/14