ALBERTA DISTANCE LEARNING CENTRE
Mathematics 10C
MAT1791
Workbook 3.3

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
3.3 Practice – IV	**I have _____ /8 and _____ %.**		
Lesson 3.3 Assignment		11	

Teacher's Comments:

_____

Teacher's Signature

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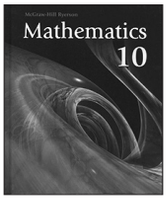

Mathematics 10

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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 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.

The diagrams used in this unit are not drawn to scale. Unless otherwise indicated, you are expected to determine unknown values through calculations, and not by direct measurement using a ruler or protractor.

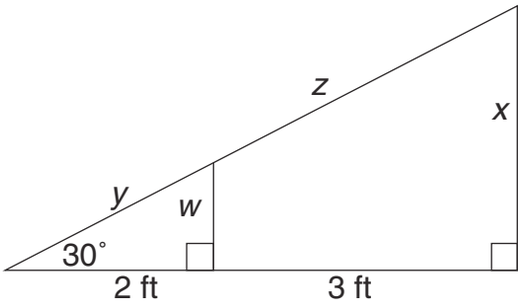
Lesson 3.3: Solving Problems with Triangles

Complete the *Practice* below. When you have completed all the questions for *Lesson 3.3 Practice – IV* 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 – IV

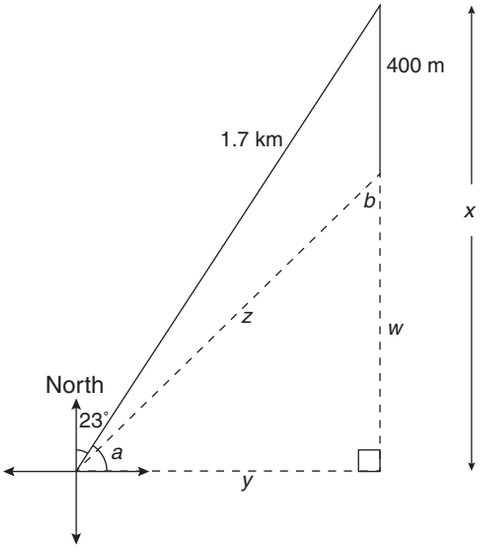
1. At the time of this writing, the Burj Khalifa (formerly the Burj Dubai) is the world's tallest building at 829.8 m. If you were to stand 200 m from the centre of the building, what would the angle of elevation be to the top? Express your answer to the nearest degree.

2. Determine the unknown lengths in the diagram. Express your answers to the nearest tenth of a foot.



3. While on an orienteering trip, Krastio walks 23° East of North for 1.7 km. He then walks due south for 400 m. To determine his direction and distance back to his original position, Krastio draws the following diagram and solution plan.

- Use the angle 23° to determine the measure of angle *a*.
- Use a sine ratio to determine the value of *x*.
- Use the value of *x* to determine the value of *w*.
- Use a tangent ratio to determine the value of *y*.
- Use a tangent ratio to determine the measure of angle *b*.
- Use the Pythagorean theorem to determine the value of *z*.



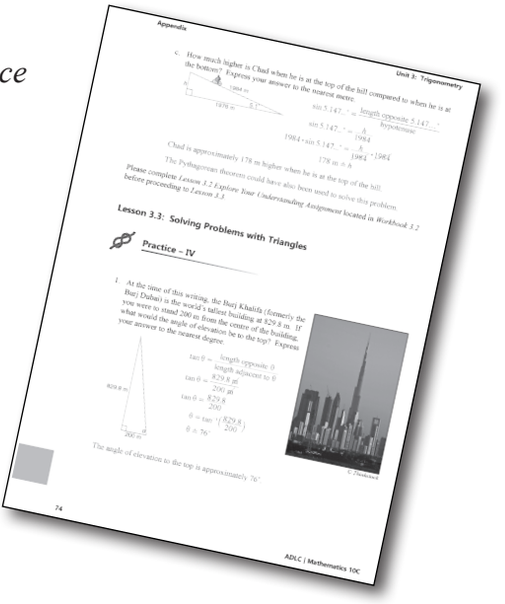
Krastio must return to his original position. Determine the direction and distance that Krastio must walk. Give your answers to the nearest degree and the nearest tenth of a kilometre.

Mark your work for *Lesson 3.3 Practice – IV* 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 3.3 Practice – IV* is _____.

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


Appendix

Unit 3: Trigonometry

c. How much higher is Chad when he is at the top of the hill compared to when he is at the bottom? Express your answer to the nearest metre.

Chad is approximately 178 m higher when he is at the top of the hill.

The Pythagorean theorem could have also been used to solve this problem.

Please complete *Lesson 3.2 Explore Your Understanding Assignment* located in *Workbook 3.2* before proceeding to *Lesson 3.3*.

Lesson 3.3: Solving Problems with Triangles

Practice – IV

1. At the time of this writing, the Burj Khalifa (formerly the Burj Dubai) is the world's tallest building at 829.8 m. If you were to stand 200 m from the centre of the building, what would the angle of elevation be to the top? Express your answer to the nearest degree.

The angle of elevation to the top is approximately 76°.

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74

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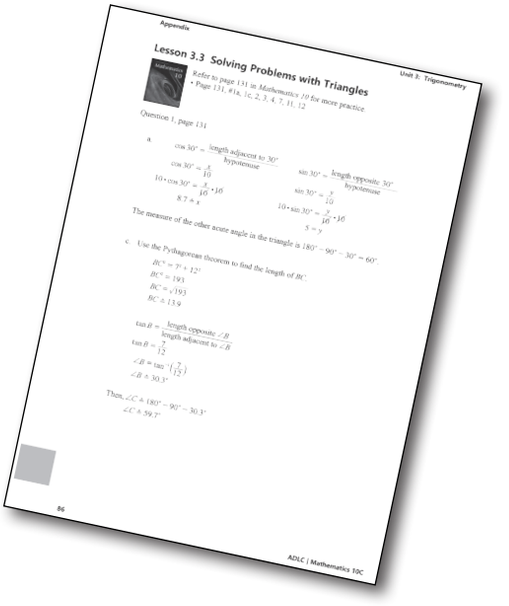
Question Number	Got it!	Almost there…	Need to retry or ask for help.
1			
2			
3			

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 131, #1a, 1c, 2, 3, 4, 7, 11, 12

Check your work in *Enhance Your Understanding*.


Appendix

Unit 3: Trigonometry

Lesson 3.3 Solving Problems with Triangles

Refer to page 131 in *Mathematics 10* for more practice.
• Page 131, #1a, 1c, 2, 3, 4, 7, 11, 12

Question 1, page 131

a.

The measure of the other acute angle in the triangle is $180° - 90° - 30° = 60°$.

c. Use the Pythagorean theorem to find the length of BC.

Then, $\angle C \approx 180° - 90° - 30.3°$
$\angle C \approx 59.7°$

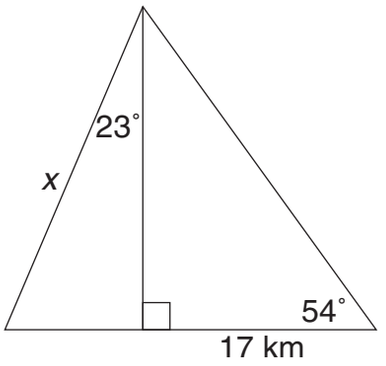
86

ADLC | Mathematics 10C

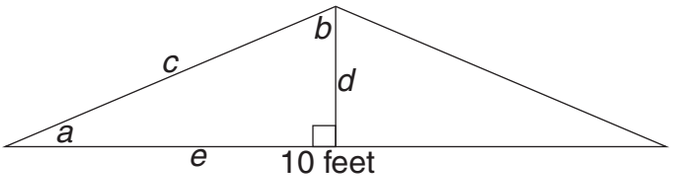
Lesson 3.3: Solving Problems with Triangles

Explore Your Understanding Assignment

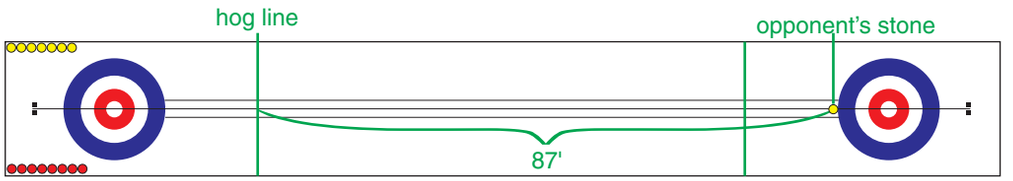
(3) 1. Determine the value of x, to the nearest tenth, in the diagram.



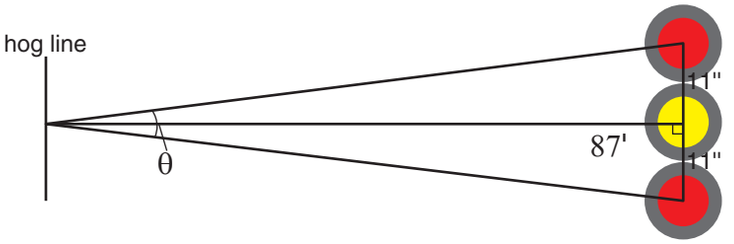
(5) 2. Sharma is building a shed and wants to determine the measurements for the roof. The span of the roof will be 10 feet and she plans to use a 5:12 roof pitch. This means that the roof will rise 5 inches for every 12 horizontal inches. Complete her diagram by determining the unknown angle measures, to the nearest degree, and side lengths, to the nearest tenth of a foot.



(3) 3. In curling, it is often necessary to hit and displace an opponent's stone to win the end. Olivia would like to hit her opponent's stone with her own stone. If she releases her stone at the hog line, it needs to travel another 87 feet before reaching her opponent's stone.



Olivia can be off by 11 inches in either direction and still hit her opponent's stone. Assuming her stone doesn't curl (change direction), within what angle, θ, to the nearest tenth, must Olivia throw her stone to hit her opponent's stone?



/11