

ALBERTA DISTANCE LEARNING CENTRE
Mathematics 10C
MAT1791
Workbook 3.2

**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
3.2 Practice – III	I have ____ /8 and ____ %.		
Lesson 3.2 Assignment		16	

Teacher's Comments:

Teacher's Signature

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4601 - 63 Avenue
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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>I have...</i>	<i>I have...</i>
4	<ul style="list-style-type: none"> used efficient and effective strategies to solve the problem(s) 	<ul style="list-style-type: none"> provided detailed explanations and followed directions appropriately to complete all questions
3	<ul style="list-style-type: none"> used effective strategies to solve the problem(s) 	<ul style="list-style-type: none"> provided clear explanations and followed directions adequately to complete most questions
2	<ul style="list-style-type: none"> used effective strategies inconsistently to solve the problem(s) 	<ul style="list-style-type: none"> provided incomplete explanations and followed some directions to complete a few questions
1	<ul style="list-style-type: none"> used ineffective strategies to solve the problem(s) 	<ul style="list-style-type: none"> 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 3.2: The Sine and Cosine Ratios

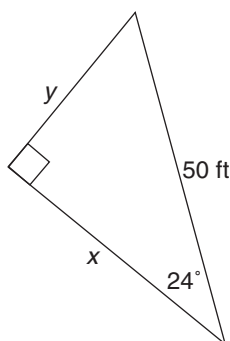
Complete the *Practice* below. When you have completed all the questions for *Lesson 3.2 Practice – III* with your best work, mark your work by first comparing your answers to the solutions provided in the *Appendix*. Then, apply the rubric found at the beginning of the *Workbook*.



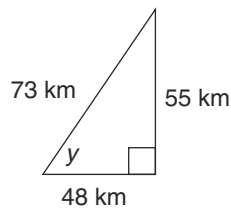
Practice – III

1. Although six different ratios can be produced for any triangle, this course only uses three of the ratios: the sine ratio, the cosine ratio, and the tangent ratio. Explain why only these three ratios are required to relate any pair of sides.

2. Determine the unknown side lengths, to the nearest tenth, in the diagram.

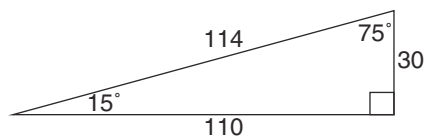


3. Show that the sine ratio, cosine ratio, and tangent ratio can each be used to determine the measure of angle y , to the nearest tenth of a degree, in the following triangle.



4. Look at the table in *Lesson 3.2* that shows the tangent, sine, and cosine ratio values for various angles. Notice that $\sin 5^\circ = \cos 85^\circ$, $\sin 10^\circ = \cos 80^\circ$, $\sin 15^\circ = \cos 75^\circ$, etc.
- a. What do the angles in each of the equalities add to?

- b. Use the following triangle to explain the equalities. (Hint: What fraction represents both $\sin 15^\circ$ and $\cos 75^\circ$ in the diagram?)



5. A boat is anchored in a river. There is 15 m of rope between the boat and the bottom of the river and the rope makes an angle of 66° with the surface of the water. How deep is the river to the nearest tenth of a metre?

6. Chad cycled up a long straight hill. The odometer on his bike showed that the hill was 1984 m long, while a digital map showed that he was 1976 m from the base of the hill.
 - a. Assuming Chad rode in a straight line and that both the odometer and the digital map are accurate, why did the two instruments show different distances?

 - b. What is the average angle of elevation of the hill? Express your answer to the nearest degree.

- 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.

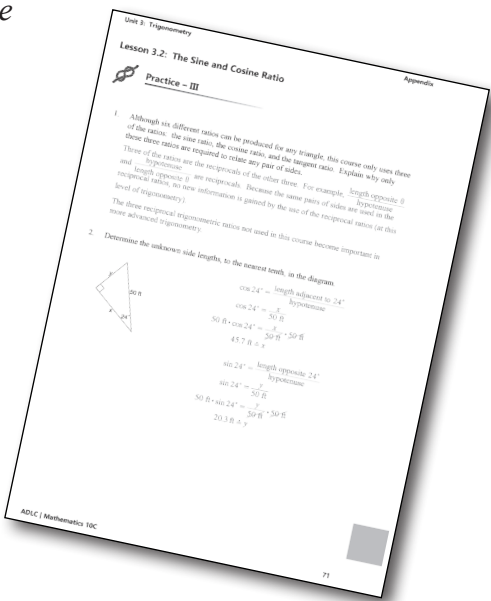
Mark your work for *Lesson 3.2 Practice – III* using the solutions provided in the *Appendix*. Then, apply the rubric found at the beginning of the *Workbook*.

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.

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

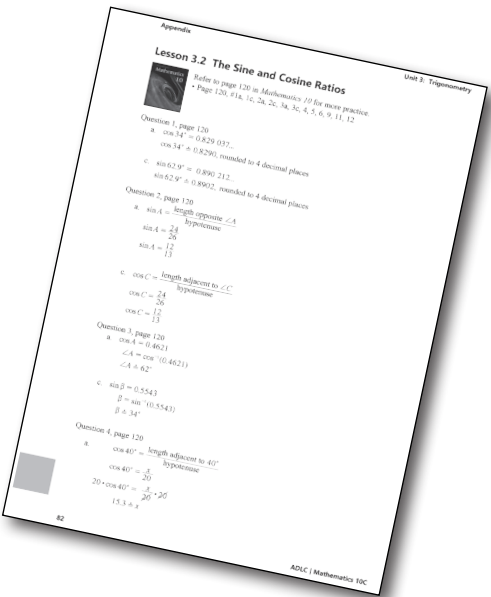


You may proceed to *Explore Your Understanding Assignment* on the next page of this *Workbook*.

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 120, #1a, 1c, 2a, 2c, 3a, 3c, 4, 5, 6, 9, 11, 12

Check your work in *Enhance Your Understanding*.

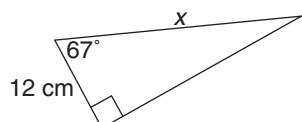


Lesson 3.2: The Sine and Cosine Ratio

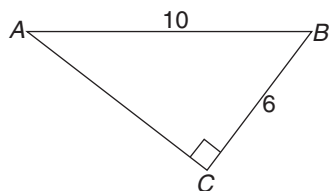


Explore Your Understanding Assignment

- ② 1. Determine the length of x , to the nearest tenth of a centimetre, in the diagram.



- ④ 2. Determine the unknown angles in the following diagram. Express your answers to the nearest degree.



- ① 3. Explain why neither $\sin x$, nor $\cos x$ will ever be greater than 1. (Hint: What side is always the longest side of a right triangle?)

- ② 4. Emma is flying a kite and has let out 32 m of string. She holds the string to the ground and estimates that it makes an angle of 45° with the ground. Approximately how high, to the nearest tenth of a metre, is Emma's kite above the ground?

- ⑤ 5. When using a straight ladder, it is recommended that the base of the ladder be placed approximately $\frac{1}{4}$ the length of the entire ladder away from the wall.

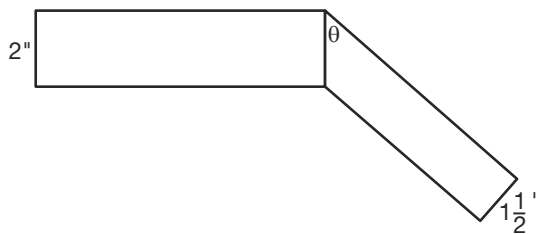
a. Sketch a diagram showing an appropriately placed ladder.



- b. If a ladder is placed correctly on a level surface, what is the angle formed between the ground and the ladder? Express your answer to the nearest degree.

- c. If a 16' ladder is placed correctly on a level surface, how high up a wall will the ladder reach? Express your answer to the nearest tenth of a foot.

- ② 6. Robyn has a 2" wide board and a $1\frac{1}{2}$ " wide board. She would like to cut the narrower board at an angle θ so the cut is 2" long and the boards will fit together as shown in the diagram. At what angle θ does she need to cut the board? Express your answer to the nearest degree.



/16