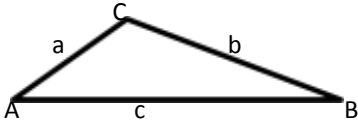
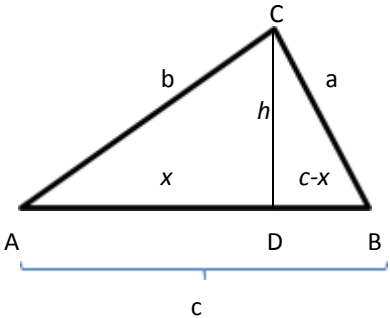


DAILY LESSON LOG OF M9GE-IVf-g1 (Day 5)

School		Grade Level	Grade 9
Teacher		Learning Area	Mathematics
Teaching Date and Time		Quarter	Fourth
I. OBJECTIVES			
A. Content Standards	The learner demonstrates understanding of the basic concepts of trigonometry.		
B. Performance Standards	The learner is able to apply the concepts of trigonometric ratios to formulate and solve real-life problems with precision and accuracy.		
C. Learning Competencies/ Objectives	Learning Competency: Illustrates laws of sines and cosines. (M9GE-IVf-g1) Learning Objectives: 1. Derive the Law of Cosine. 2. State the Law of Cosine. 3. Internalize the value of concern for other in accomplishing the day's task.		
II. CONTENT	Law of Cosine		
III. LEARNING RESOURCES			
A. References			
1. Teacher's Guide			
2. Learner's Materials	Page 497- 505		
3. Textbook pages	Patterns and Practicalities page 446		
4. Additional Materials from Learning Resource (LR) portal			
B. Other Learning Resources			
IV. PROCEDURES			
A. Review previous lesson or presenting the new lesson	The teacher will recall to the students the law of Sines that can be used in the following situations. 1. Two angles and one side (SAA Case & ASA Case) 2. Two sides and an angle opposite one of these sides (SSA Case)		
B. Establishing a purpose for the lesson	The teacher tells the students that oblique triangles can also be solved using the Law of Cosines.		
C. Presenting examples/ instances of the new lesson	 The teacher discusses with the students the Law of Cosine. This law states the following: "The square of the length of one side is equal to the sum of the squares of the other two sides minus the product of twice the two sides and the cosine of the angle between them."		
D. Discussing new concepts and practicing new skills #1	The teacher will tell the students: "Just like the sine law, the cosine law relates the sides and angles of a triangle."  The cosine law states that for any triangle ABC, $a^2 = b^2 + c^2 - 2bc \cos A$$b^2 = a^2 + c^2 - 2ac \cos B$$c^2 = a^2 + b^2 - 2ab \cos C$ Proof: Let h be the height of triangle ABC as shown in the figure above. Triangle BCD is a right triangle, so by the Pythagorean theorem, $a^2 = (c - x)^2 + h^2$$a^2 = c^2 - 2cx + x^2 + h^2 \text{ (1)}$However, in triangle ADC		

	$b^2 = x^2 + h^2$ therefore, substituting in (1), we have $a^2 = c^2 - 2cx + b^2$ (2). Also, in triangle ADC, $\cos A = \frac{x}{b}$ So, $x = b \cos A$. Substituting in (2), we have, $a^2 = b^2 + c^2 - 2bc \cos A$. The proof above can also be used to derive the other two equations.
E. Discussing new concepts and practicing new skills # 2	
F. Developing mastery (Leads to formative assessment3)	The teacher will let the students answer the comprehension check. Write TRUE if the statement is true. If the statement is false, change the underlined word or phrase to make it true. _____ 1. In any $\triangle ABC$, $c^2 = a^2 + b^2$ _____ 2. The Law of Cosines can be used to find an unknown <u>side length or angle measure</u>. _____ 3. The <u>direction</u> of a vector is called its magnitude. _____ 4. The Law of Cosines can be used to solve any triangle given two sides and <u>an angle</u>. Answer Key: $c^2 = a^2 + b^2 - 2ab \cos C$ - true - length - The included angle
G. Finding practical applications of concepts and skills in daily living	
H. Making generalizations and abstractions about the lesson	The teacher summarizes the mathematical skills or principles used in the Law of Cosine through a question like: - When can we use the law of cosine? Possible Answer: - We can use the law of cosine when “two sides and the included angle are known” and “three sides are known”.
I. Evaluating Learning	The teacher lets the students answer individually the formative assessment. Follow the steps and use the Law of Cosines to find the length of side a in $\triangle ABC$, if $m\angle A = 70^\circ$, $b = 24$, and $c = 15$. - Write the Law of Cosines so that a^2 is isolated. - Substitute the given values. - Simplify the resulting expression. Compute for a by taking the positive square root. Answer Key: $a^2 = b^2 + c^2 - 2bc \cos A$ $a^2 = 24^2 + 15^2 - 2(24)(15) \cos 70^\circ$ $a = \sqrt{576 + 225 - 720 \cos 70^\circ}$ $a = 23.55 \approx 24$
J. Additional activities or remediation	
V. REMARKS	
VI. REFLECTION	
A. No. of learners who earned 80% of the evaluation	
B. No. of learners who require additional activities for	

remediation who scored below 80%	
C. Did the remediation lesson work? No. of learners who have caught up with the lesson.	
D. No. of learner who continue to require remediation.	
E. Which of my teaching strategies worked well? Why did these work?	
F. What difficulties did I encounter which my principal or supervisor can help me solve?	
G. What innovation of localized materials did I wish to share with other reachers.	

Prepared by:
FATIMA G. CARBONILLA
Labogon NHS