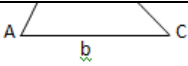
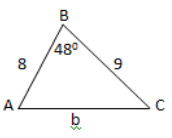
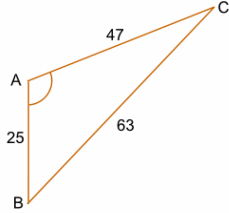


DAILY LESSON LOG of (M9AL-IVh-j-1) (Day 3)					
School		Grade Level		Grade 9	
Teacher		Learning Area		Mathematics	
Teaching Date and Time		Quarter	4 th	DLP NO:	
I. OBJECTIVES					
A. Content Standards	Demonstrate understanding of the basic concepts of trigonometry				
B. Performance Standards	Is able to apply the concepts of trigonometric ratios to formulate and solve the real-life problems with precision and accuracy				
C. Learning Competencies / Objectives	Learning Competencies: Solves problems involving oblique triangles (M9GE-IVh-j-1) Learning Objectives: 1. State the Law of Cosine 2. Use law of cosine in solving problems that involve oblique triangles 3. Display interest in solving problems that involve oblique triangles using the law of cosine				
II. CONTENT		Solve Problems that Involve Oblique Triangles (Law of Cosine)			
III. LEARNING RESOURCES					
References					
1. Teacher’s Guide pages					
2. Learner’s Materials pages		497-500			
3. Textbook pages					
4. Additional Materials from Learning Resource (LR) portal					
Other Learning Resources		https://www.mathopolis.com/questions/			
IV. PROCEDURES					
A. Review previous lesson or presenting the new lesson	The teacher asks the students: 1. What is an oblique triangle? 2. What is the law of cosine? 3. What data are required for solving oblique triangle using the law of cosine? Answer: 1. Oblique triangle is a triangle which does not contain any right angle. 2. The law of cosine – the square of any side of a triangle is equal to the sum of the squares of the other two sides minus the product of these sides and the cosine of their included angle. 3. The Law of Cosine can be used in the following situations: - two sides and the included angle are known - three sides are known				
B. Establishing a purpose for the lesson	The teacher lets the students use the law of cosine in solving problems that involve oblique triangles.				
C. Presenting examples/ instances of the new lesson	The teacher presents an example of oblique triangle that can be solved using the Law of Cosine. The teacher asks the students the following : 1. How will you classify $\triangle ABC$? 2. What are the given data of $\triangle ABC$?				

	3. What are the missing part of measurements in $\triangle ABC$?  Answer: $\triangle ABC$ is an obtuse triangle . $\angle B = 48^\circ$; side a = 9; side c = 8 $\angle A$, $\overline{AB}$; $\overline{BC}$
D. Discussing new concepts and practicing new skills #1	The teacher presents and discusses an example that shows solving problem that involves oblique triangle using the law of cosine. Based on the given $\triangle ABC$, the teacher asks the students the following questions: - What law of the oblique triangles may apply in solving measurements of this triangle? - What is/are the equation/s of the law of cosine? - What are the measurements of the missing parts of the $\triangle ABC$?  Answer: - The law of cosine is applicable in solving the missing part measurements of $\triangle ABC$ $a^2 = b^2 + c^2 - 2bc(\cos A)$ $b^2 = a^2 + c^2 - 2ac(\cos B)$ $c^2 = a^2 + b^2 - 2ab(\cos C)$ - To find the unknown measurements of the given triangle, the teacher discusses to the students that they will be using the law of sine because the conditions when to use this law of cosine are present. The teacher, with the students, solves the unknown measurements of the given triangle. <i>solve for side b:</i> $b^2 = a^2 + c^2 - 2ac(\cos B)$ $b^2 = 9^2 + 8^2 - 2(9)(8)(\cos 48^\circ)$ $b^2 = 81 + 64 - 144(0.6691)$ $b^2 = 145 - 96.35$ $b^2 = 48.65$ $\sqrt{b^2} = \sqrt{48.65}$ $b = 6.97$ $b = 7$ <i>solve for $\angle A$:</i> $a^2 = b^2 + c^2 - 2bc(\cos A)$ $9^2 = 7^2 + 8^2 - 2(7)(8)(\cos A)$ $81 = 49 + 64 - 112(\cos A)$ $81 - 113 = -112(\cos A)$ $-32 = -112(\cos A)$ $\frac{-32}{-112} = \frac{-112(\cos A)}{-112}$ $\cos A = \frac{-32}{-112}$ $\cos A = 0.2857$ $A = \cos^{-1}(0.2857)$ $A = 73.39^\circ$ $A = 73^\circ$ <i>solve for $\angle C$:</i> $c^2 = a^2 + b^2 - 2ab(\cos C)$ $8^2 = 9^2 + 7^2 - 2(9)(7)(\cos C)$ $64 = 81 + 49 - 126(\cos C)$ $64 - 130 = -126(\cos C)$ $-66 = -126(\cos C)$ $\cos C = \frac{-66}{-126}$ $\cos C = 0.5238$ $C = \cos^{-1}(0.5238)$ $C = 58.41^\circ$

	$C = 58^{\circ}$
E. Discussing new concepts and practicing new skills #2	
F. Developing mastery (leads to formative assessment 3)	
G. Finding practical applications of concepts and skills in daily living	
H. Making generalizations and abstractions about the lesson	The teacher asks the following questions to the students: 1. What is the Law of Cosine? 2. What data are required to solve oblique triangle using the Law of Cosine? Answer: 1. The Law of Cosine – the square of any side of a triangle is equal to the sum of the square of the other two sides minus the product of these sides and the cosine of their included angle. 2. The data required for solving oblique triangle using the law of cosine are: • two sides and the included angle are known • three sides are known
I. Evaluating Learning	In pairs, the teacher lets the students find the unknown parts of an oblique triangle using the Law of Cosine.  Answer: Solve for $\angle A$: $a^2 = b^2 + c^2 - 2bc(\cos A)$ $63^2 = 47^2 + 25^2 - 2(47)(25)(\cos A)$ $3969 = 2209 + 625 - 2350(\cos A)$ $3969 - 2834 = -2350(\cos A)$ $3969 - 2834 = -2350(\cos A)$ $-1135 = -2350(\cos A)$ $\frac{-1135}{-2350} = \frac{-2350(\cos A)}{-2350}$ $\cos A = 0.4830$ $A = \cos^{-1}(0.4830)$ $A = 61^{\circ}$ Solve for $\angle B$: $b^2 = a^2 + c^2 - 2ac(\cos B)$ $47^2 = 63^2 + 25^2 - 2(63)(25)(\cos B)$ $2209 = 3969 + 625 - 3150(\cos B)$ $2209 - 4594 = -3150(\cos B)$ $\cos B = \frac{-2385}{-3150}$ $\cos B = 0.7571$ $B = \cos^{-1}(0.7571)$ $B = 41^{\circ}$

	<i>Solve for $\angle C$:</i> $\angle A + \angle B + \angle C = 180^0$ $\angle A + \angle B + \angle C = 180^0$ $61^0 + 41^0 + \angle C = 180^0$ $102^0 + \angle C = 180^0$ $\angle C = 180^0 - 102^0$ $\angle C = 78^0$
<i>J. Additional activities or remediation</i>	The teacher instructs the students to bring their own scientific calculator for the next meeting.
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 remedial lesson work? No. of learners who have caught up with the lesson.	
D. No. of learners 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 or localized materials did I use/ discover which I wish to share with other teachers	

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