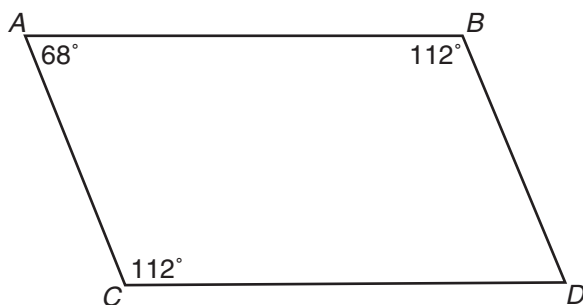## Unit 4: Geometry

Final Review Assignment

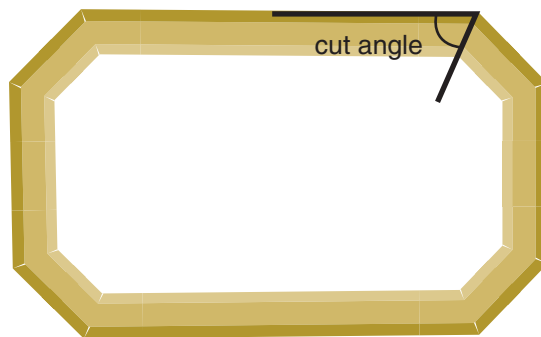(2)   1.   Is there enough information to determine whether or not *ABCD* is a parallelogram? If so, explain whether or not it is a parallelogram.

A 68°   *B* 112°

C 112°   *D*

_____

_____

_____

(2)   2.   Reagan is building a picture frame for a gift. He plans to make it an octagon with equal angles. To what angle should Reagan saw his boards to complete the project?

cut angle

①   3.   Triangles *ABC* and *DEF* are both right triangles. Each has a hypotenuse length of 10 m. Is this enough information to conclude that the two triangles are congruent?
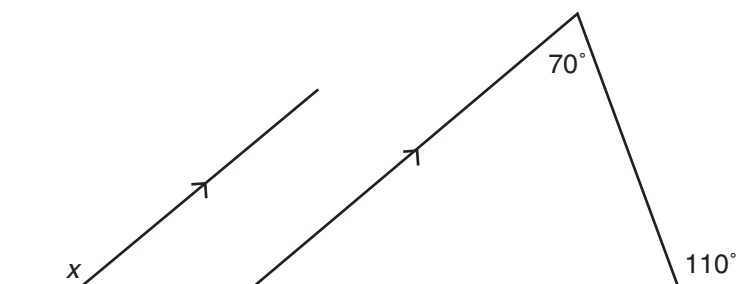
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②   4.   Explain why any proof that uses the AAS congruence condition could also use the ASA condition.

_____

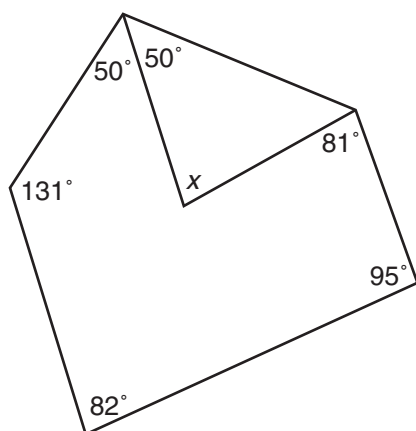_____

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④   5.   Determine the unknown angle values for the following.

a.

b.

③   6.   As the earth revolves around the sun, distant objects can be seen from different locations. This idea can be used to measure the distance between earth and nearby stars and is called stellar parallax. To see how this process works, consider the simplified scenario below.

A distant object is observed on earth from location 1 and again six months later at location 2. The angle at both location 1 and 2 is 89.9°. How many astronomical units is the distant object from location 1?

A bearing of 135˚
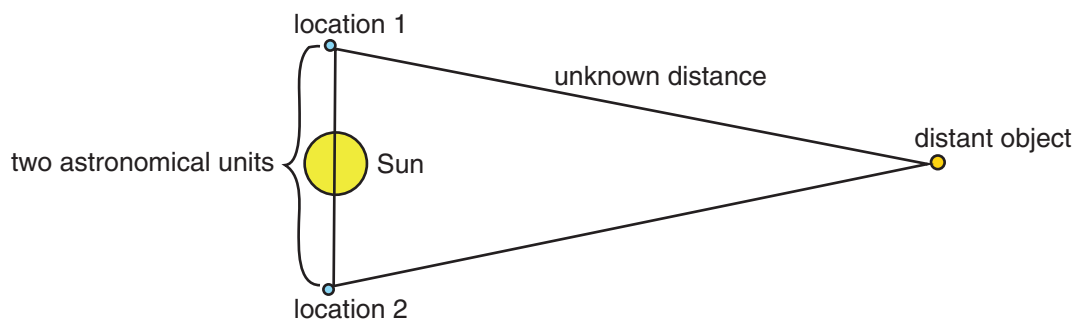
(4)   7.   Orienteering is a sport that involves navigating your way to a series of checkpoints with the aid of a map and compass. The goal is to find each point on the map as quickly as possible. A typical compass used for orienteering is divided into 360° where 0° is north and a bearing is measured clockwise from north.
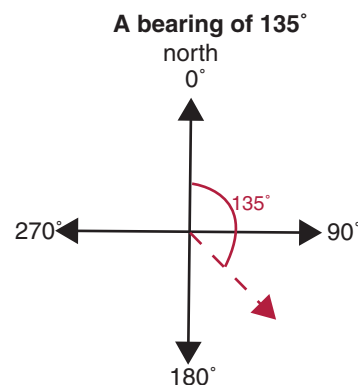
Gabino and Mia are taking part in an orienteering course. They are instructed to walk 2.3 km on a bearing of 305° to reach point A. There they are supposed to change their bearing to 64° and walk 3.1 km to reach point B. Next, they are supposed to return to their original position, C.

a.   Draw a diagram to represent this scenario.

b.   Explain why the interior angle formed at A must be 61°.

_____

_____

_____

_____

_____

c.   If they walk at an average pace of 4.5 km/h, how long should they expect the entire trip to take?

(4)   8.   Jared is designing a gazebo like the own shown. Both the base and the roof will have the same regular hexagonal shape and size. The distance from the centre of the base to a vertex on the base is 3 m.

a.   What interior angle is formed at each vertex on the base?

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b.   Determine the length of one side of the base. The diagram below may help.

3 m

$\frac{1}{2}$ the angle determined in a

unknown side length

$\frac{1}{2}$ the angle determined in a
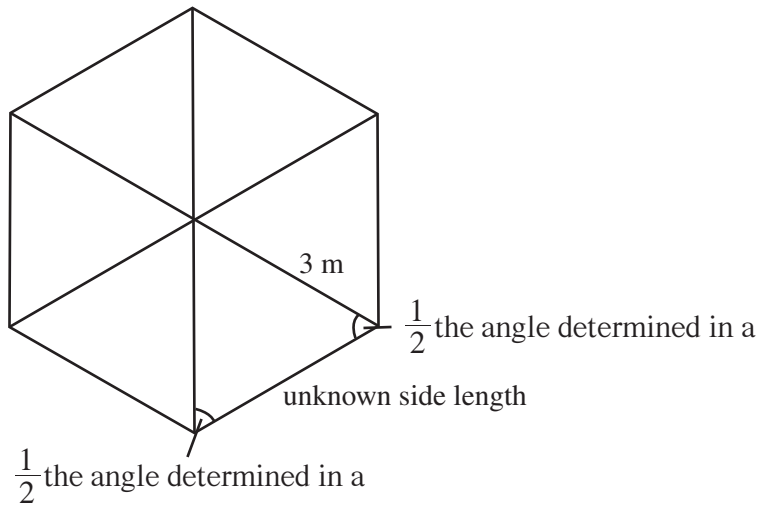
c.   The side length of the gazebo's base is the same as a side length of the outer surface of the gazebo's roof. If the roof is 1.5 m tall, what angle is formed at the top of each triangular section of the roof?

unknown angle

1.5 m

length determined in b.

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/22

Unit 4: Geometry

Check Point

Use the *Check Point* to check and reflect before completing the *Big Game!* quiz for *Unit 4: Geometry*.

I understand how to:

Unit 4 Concepts	Place a checkmark in the appropriate column		
	Yes	**No**	**Maybe**
Prove properties of angles formed by transversals and parallel lines.			
Determine if two lines are parallel.			
Draw parallel lines using a compass or protractor.			
Determine unknown angles using parallel lines, angles, and triangles.			
Determine and use a rule for determining the interior angle sum of a polygon.			
Identify and correct errors in a geometric proof.			
Prove that two triangles are congruent.			
Solve problems using angles and triangles.			
Determine if a solution to a geometric problem is reasonable and correct it if necessary.			
Explain a proof of the sine law.			
Explain a proof of the cosine law.			
Draw a diagram to represent a word problem that uses triangles.			
Solve problems using the sine law.			
Solve problems using the cosine law.			
Solve problems that involve more than one triangle.			

If you have any concerns from the *Check Point*, please refer to *Strengthening and Conditioning* in the *Module* for designated practice questions and their solutions, to help you improve your skills.

Contact your teacher for assistance and clarification as needed.

You have completed the *Lessons* and *Workbooks* for *Unit 4: Geometry*. Please review all work in *Workbook 4B* to ensure it is your best work. Submit *Workbook 4B* for marking at this time and continue your training with the next unit, *Unit 5: Proportional Reasoning*.

Complete the *Big Game!* quiz when you have reviewed the feedback provided by your marker for *Workbooks 4A* and *4B*.

End Of Workbook 4B