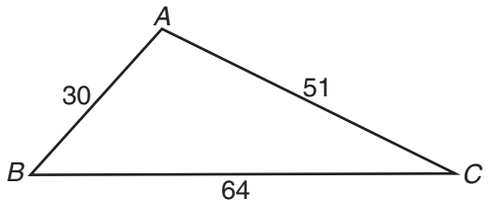
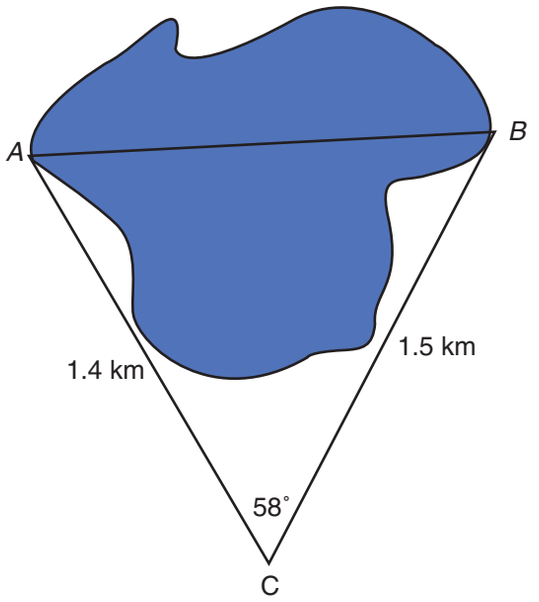
Unit 4: Geometry Lesson 4.5

Game On!

(2) 1. Determine the measure of angle B.



(2) 2. Determine the distance across the lake from point A to B.



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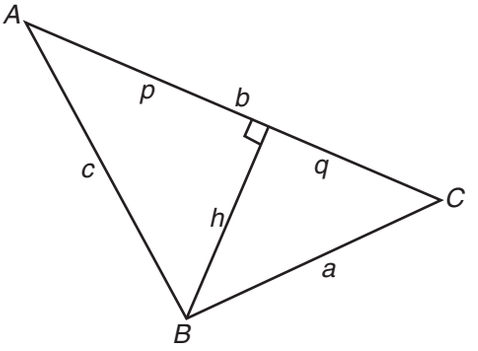
3. Refer to Example 1 in Section A of *Lesson 4.5*.

a. Four relationships from the diagram are given. Explain how you know each relationship is true.

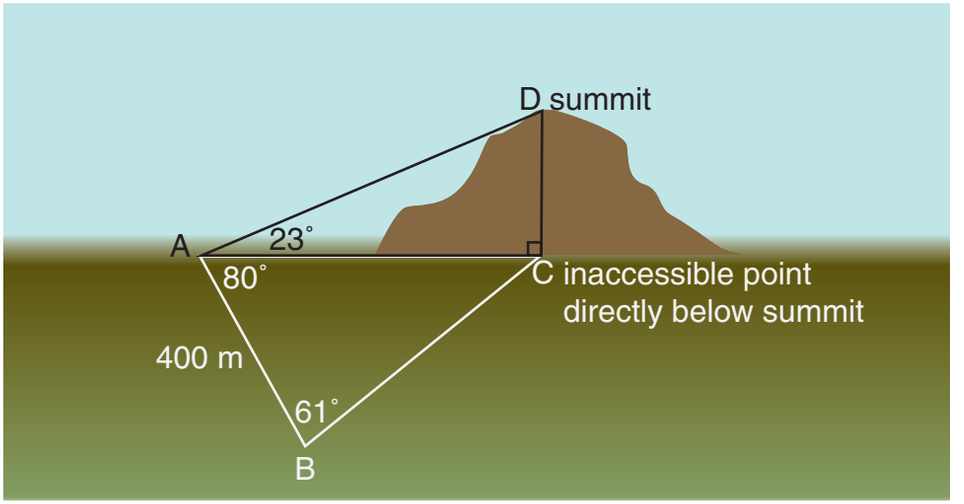


Relationship	Explanation
$h^2 = c^2 - p^2$	
$h^2 = a^2 - q^2$	
$p = c\cos A$	
$q = b - p$	

b. Explain what happens at each step of the remainder of the proof from Example 1 in Section A of *Lesson 4.5*.

Step	Explanation
$a^2 - q^2 = c^2 - p^2$	
$a^2 = c^2 - p^2 + q^2$	
$a^2 = c^2 - p^2 + (b - p)^2$	
$a^2 = c^2 - p^2 + b^2 - 2bp + p^2$	
$a^2 = c^2 + b^2 - 2bp$	
$a^2 = c^2 + b^2 - 2bc\cos A$	

(3) 4. Deni would like to estimate the height of a hill from its base. Using a compass she found that the angle between *C* and *B*, from *A*, was 80°. She also estimated the angle from horizontal to the summit to be 23°. She then walked 400 m to *B* where she measured the angle between *A* and *C* to be 61°. Use her information to determine the height of the hill.



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You have completed *Lesson 4.5 Game On!*. Please proceed to the *Unit 4: Geometry Time Out*, on the next page of this *Workbook*.