MAT.08.ER.3.0000G.F.016 Claim 3

Sample Item ID:	MAT.08.ER.3.0000G.F.016
Grade:	08
Primary Claim:	**Claim 3: Communicating Reasoning** Students can clearly and precisely construct viable arguments to support their own reasoning and to critique the reasoning of others.
Secondary Claim(s):	Claim 1: Concepts and Procedures Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency.
Primary Content Domain:	Geometry
Secondary Content Domain(s):	
Assessment Target(s):	3 F: Base arguments on concrete referents such as objects, drawings, diagrams, and actions. 1 H: Understand and apply the Pythagorean theorem. 3 B: Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures.
Standard(s):	8.G.7
Mathematical Practice(s):	3, 5, 6
DOK:	3
Item Type:	CR
Score Points:	2
Difficulty:	M
Key:	See Sample Top-Score Response.
Stimulus/Source:	
Target-specific attributes (e.g., accessibility issues):	
Notes:	Part of PT set; drawing tools are turned off for this item.

Part A

Triangle *STV* has sides with lengths of 7, 11, and 14 units. Determine whether this triangle is a right triangle.

Show all work necessary to justify your answer.

Part B

A right triangle has a hypotenuse with a length of 15. The lengths of the legs are whole numbers. What are the lengths of the legs?

Sample Top-Score Response:

Part A

$7^2 + 11^2$ does not equal 14^2 because 49 + 121 = 170, not 196.

Therefore, it is not a right triangle because the side lengths do not satisfy the Pythagorean theorem.

Part B

9, 12

Scoring Rubric:

The item will score 0-2 points, based on the following:

2 points: The student shows a thorough understanding of the Pythagorean theorem and its converse. The student correctly explains that the given triangle is not a right triangle and correctly provides legs that are whole numbers for a right triangle with a hypotenuse of length 15.

1 point: The student shows a partial understanding of the Pythagorean theorem and its converse. The student either correctly explains that the given triangle is not a right triangle or correctly provides legs that are whole numbers for a right triangle with a hypotenuse of length 15.

0 points: The student shows inconsistent or no understanding of the Pythagorean theorem and its converse.