

NWEA Assessment Item Illustrating 8.G.B

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Domain: Geometry

8.G.B: Understand and apply the Pythagorean Theorem.

Calculator Availability: Yes

Use the information to answer the question.

A triangle ABC has side length $|AB| = 1$, $|BC| = \sqrt{2}$, and $|AC| = \sqrt{3}$.

What type of angle is each angle in the triangle? Choose a type for each angle.

Angle	Type		
$\angle ABC$	acute	obtuse	right
$\angle BCA$	acute	obtuse	right
$\angle CAB$	acute	obtuse	right

Alignment: 8.G.B: Understand and apply the Pythagorean Theorem.

This item requires students to apply their knowledge of the Pythagorean Theorem and right triangles to determine the type of angles in one triangle, given the side lengths.

Coherence: This item requires students to bring multiple mathematical understandings to bear on the problem and is a good exemplar for illustrating what is intended by coherence and how coherence can be reflected in assessment. Items that require deep conceptual understanding can sometimes be mistaken for unaligned items because they require students to integrate knowledge from across grades, domains, and/or standards. This item is indirectly tied to 8.G.B.6, which requires an explanation of a proof of the converse of the Pythagorean Theorem, and it is closely tied to students' work in the grade 8 Number System domain standards, which introduce irrational numbers as part of the number system.

Rigor: This item attends to conceptual understanding and procedural skill. Students are relating multiple grade-level concepts (Pythagorean Theorem and work with irrational numbers) and then engaging in sophisticated, nontypical reasoning. Using the Pythagorean Theorem is a grade-level procedure.

Answer Key:

Use the information to answer the question.

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