

# NWEA Assessment Item Illustrating 7.G.B.5

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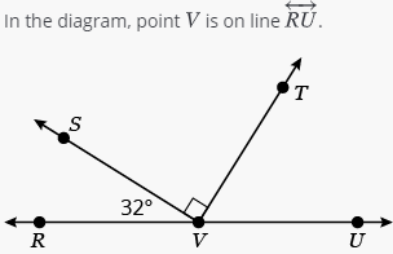
**Domain:** Geometry

**7.G.B** Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

**Calculator Availability:** Yes

Use the information to answer the question.

In the diagram, point  $V$  is on line  $\overleftrightarrow{RU}$ .



What is the measure of angle  $TVU$ ? Enter the answer in the box.

**Alignment: 7.G.B.5:** Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.

This item asks students to solve for an unknown angle by synthesizing and applying knowledge of the properties of adjacent, supplementary, complementary, and right angles. There are multiple approaches to arrive at the measure of angle  $TVU$ . Knowledge of angle measurements allows students to use algebraic reasoning to determine an unknown value.

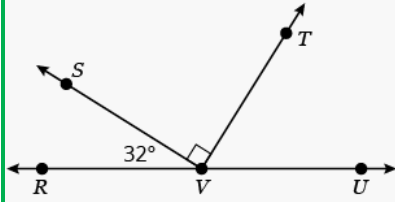
**Coherence:** Geometry has two important themes that began in elementary grades, one of which was the understanding of properties of geometric figures and the logical connections between them. In grade 4, students were introduced to the concept of an angle<sup>4.G.A.1</sup> and learned that angle measures are additive.<sup>4.MD.C.7</sup> In grade 6, students continued their geometry work with composition and decomposition of rectilinear figures. In grade 7, students use their knowledge of algebra and facts about angles to write and solve simple equations to find unknown angles in figures. This work extends to grade 8, where students will use informal arguments to establish facts about the angle sum and exterior angle of triangles and about the angles created when parallel lines are cut by a transversal.<sup>8.G.A.5</sup>

**Rigor:** This item attends to conceptual understanding and procedural skill. Students recall the definitions of complementary, supplementary, adjacent, and right angles to find the missing angle. They apply below grade level procedures of addition or subtraction to complete the computation, with a calculator provided as a tool.

**Answer Key:**

Use the information to answer the question.

In the diagram, point  $V$  is on line  $\overleftrightarrow{RU}$ .



What is the measure of angle  $TVU$ ? Enter the answer in the box.

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