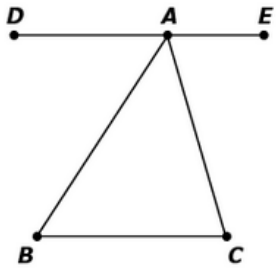
MAFS.912.G-CO.3.10	Prove theorems about triangles; use theorems about triangles to solve problems. *Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.*
Item Types	Editing Task Choice – May require choosing a statement in a narrative proof. GRID – May require completing a proof as a diagram, such as a flowchart. Hot Text – May require completing a proof by selecting statements. Multiselect – May require identifying statements or values. Multiple Choice – May require selecting from choices. Open Response – May require explaining a proof in a narrative paragraph or providing a justification.
Clarifications	Students will prove theorems about triangles. Students will use theorems about triangles to solve problems.
Assessment Limits	Items may assess theorems and their converses for interior triangle sum, base angles of isosceles triangles, mid-segment of a triangle, concurrency of medians, concurrency of angle bisectors, concurrency of perpendicular bisectors, triangle inequality, and the Hinge Theorem. Items may include narrative proofs, flow-chart proofs, two-column proofs, or informal proofs. In items that require the student to justify, the student should not be required to recall from memory the formal name of a theorem.
Stimulus Attribute	Items may be set in a real-world or mathematical context.
Response Attributes	Items may require the student to give statements and/or justifications to complete formal and informal proofs. Items may require the student to justify a conclusion from a construction.
Calculator	Neutral

Sample Item	Item Type
	Hot Text – Drag and Drop

A figure is shown, where $\overline{DE}$ is parallel to $\overline{BC}$.



Given: $\overline{DE} \parallel \overline{BC}$
Prove: $\angle ABC + \angle BCA + \angle CAB = 180°$

Drag statements from the statements column and reasons from the reasons column to their correct location to complete the proof.

Statement	Reason
1. $\overline{DE} \parallel \overline{BC}$	1. Given
2.	2.
3.	3.
4. $\angle DAE = 180°$	4.
5.	5. Angle addition
6.	6.
7. $\angle ABC + \angle BCA + \angle CAB = 180°$	7. Substitution

Statements
$\angle DAB + \angle CAB + \angle EAC = \angle DAE$
$\angle DAB \cong \angle ABC$
$\angle EAC = \angle ACB$
$\angle DAB + \angle CAB + \angle EAC = 180°$

Reasons
Supplementary angles
Substitution
If two parallel lines are cut by a transversal, then the alternate interior angles are congruent.
If two parallel lines are cut by a transversal, the alternate interior angles are congruent.