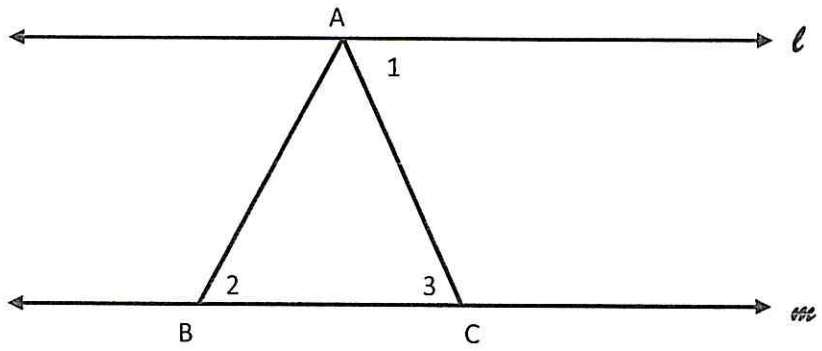
EXTENDED RESPONSE: Algebra Proof using Triangles and Parallel Lines

Given: $\ell \parallel m$; AB = AC ; $m\angle 1 = 40°$

Prove: $m\angle 2 = 40°$



Statements	Reasons
$\ell \parallel m$	Given
AB = AC	**A.** Given
$m\angle 1 = 40°$	Given
B. $\angle 1 \cong \angle 3$	If a transversal intersects two parallel lines, then alternate interior angles are congruent.
$m\angle 1 = m\angle 3$	Definition of congruent
$m\angle 2 = m\angle 3$	If two sides of a triangle are equal, then the angles opposite those sides are equal.
$m\angle 1 = m\angle 2$	**C.** Transitive Property
D. $m\angle 2 =$ 40°	Substitution