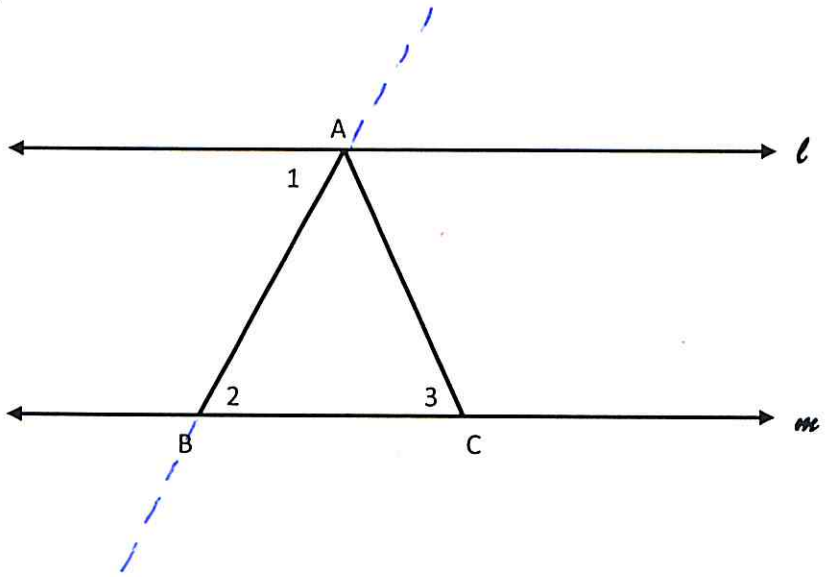
EXTENDED RESPONSE: Algebra Proof using Triangles and Parallel Lines

Given: $\ell \parallel m$; AB = AC ; $m\angle 1 = 55°$

Prove: $m\angle 3 = 55°$



Statements	Reasons
$\ell \parallel m$	Given
AB = AC	**A.** Given
$m\angle 1 = 55°$	Given
B. ∠1 ≅ ∠2	If a transversal intersects two parallel lines, then alternate interior angles are congruent.
$m\angle 1 \cong m\angle 2$	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.
$m\angle 1 = m\angle 3$	**C.** Transitive Property
D. $m\angle 3 =$ 55°	Substitution