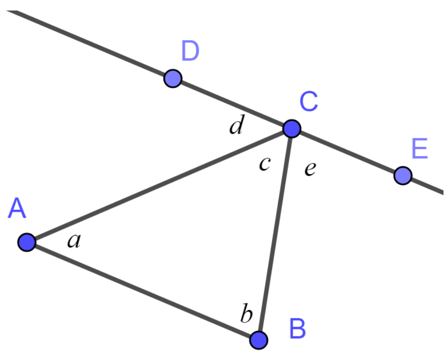
Proof of theorem 57:

Let ΔABC be a triangle.

By [look up the correct theorem number here], there exists a line that is parallel to $\overleftrightarrow{AB}$ that goes through the point C

Name points D, E and angle measures a, b, c, d, e as shown on the diagram:



By Axiom 7 (considering transversal $\overleftrightarrow{AC}$), $a+(c+e)=180°$ so by theorem 54 $a=d$

By Axiom 7 (considering transversal $\overleftrightarrow{BC}$), $b+(c+d)=180°$ so by theorem 54 $b=e$

By Theorem 25, a straight angle has measure 180°, so $d+c+e=180°$

By substitution $a+b+c=180°$