**Activity 3.3.3. Proving Lines are Parallel**

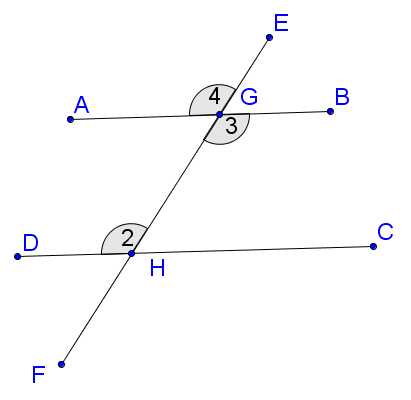
We have already proved (in activity 3.3.2) that if two lines cut by a transversal form congruent corresponding angles, then the two lines are parallel. We will now use this fact to prove the converses of two other theorems about parallel lines.

1. Parallel Lines Alternate Interior Angles Converse

Given:

Prove:

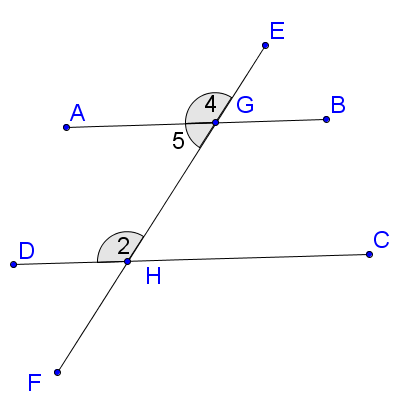
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1. Parallel Lines Same Side Interior Angles Converse

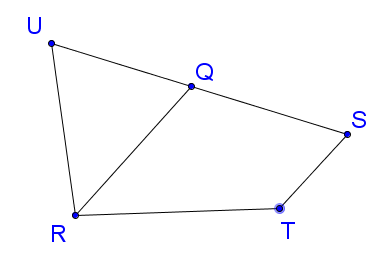
Given: are supplementary

Prove:



1. Given: and

Prove:



1. Given: and

Prove:

