

2.2.2: Parallel Lines & Deductive Reasoning

Curricular Competencies

B3: I can apply flexible and strategic approaches to problems

C1: I can explain and justify math ideas and decisions

We have been using deductive reasoning to find missing angles in diagrams. Sometimes, mathematicians use deductive reasoning in the form of a _____.

Remember, one of the premises of deductive reasoning is that one bit of information leads to another bit of information and so on.

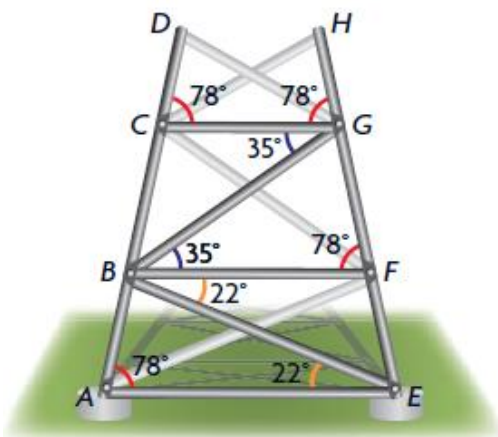
Transitive property: _____

Example 1: When a transversal intersects a pair of parallel lines, prove the alternate interior angles are equal.

Sketch:

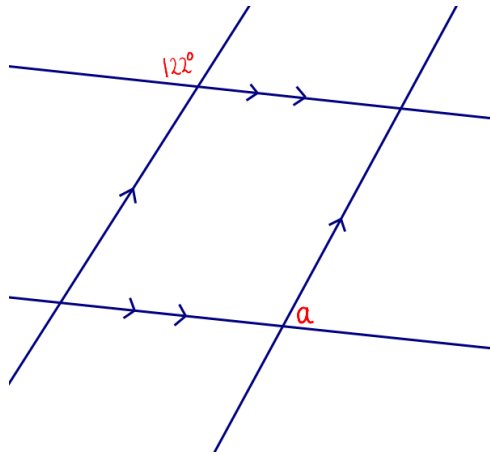
Statement	Justification

Example 2: One side of a cellphone tower will be built as shown. Use the angle measures to prove that braces CG, BF, and AE are parallel.



Statement	Justification

Example 3: Prove that $\angle a = 58^\circ$.



Statement

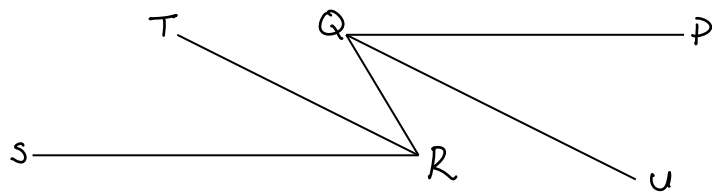
Justification

Example 4: Given: $QP \parallel RS$

RT bisects $\angle QRS$

QU bisects $\angle PQR$

Prove: $QU \parallel RT$



Statement

Justification