5.6 Inequalities in 2 Triangles

Hinge Theorem

If 2 sides of one triangle are congruent to 2 sides of another triangle and the included angle of the first triangle is greater than the included angle of the second triangle then the third side of the first triangle is longer than the third side of the second triangle.

Ex.

Converse Hinge Theorem

Ex.

Indirect Proof

* Identify prove statement
* Start proof by stating the opposite of the prove statement (reason “assumption”)
* Go through the proof using logical reasoning until a contradiction to the given, definition, or theorem occurs
* Point out that the assumption is false and prove statement if true

Ex.

Conjecture:

If a number is odd, it is not divisible by 4.

Given: x is odd

Prove: x is not divisible by 4

Assumption: x is divisible by 4

Ex.

In a triangle, there can be at most one right angle.

Given: ABC

Prove: There is only right angle

Assumption: There are 2 right angles