6.1 Inequalities and Indirect Proofs

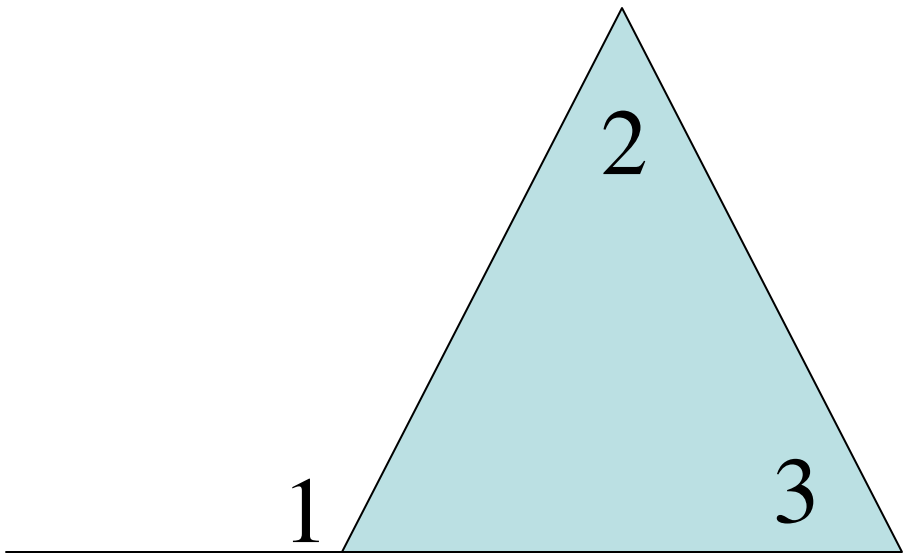
Up until now we have dealt with sides and angles that are _____ and have used the properties of _____ in our proofs.

Now we will deal with _____ sides and angles. We will be using properties of _____.

Property of Inequality

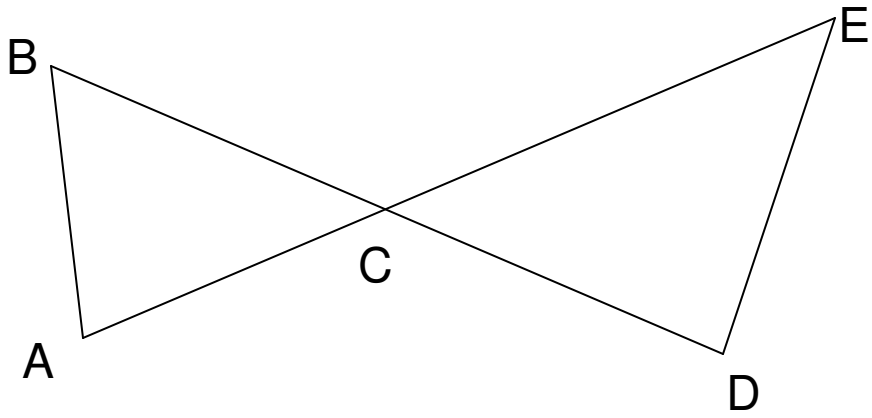
(All of these)

Exterior Angle Theorem: _____



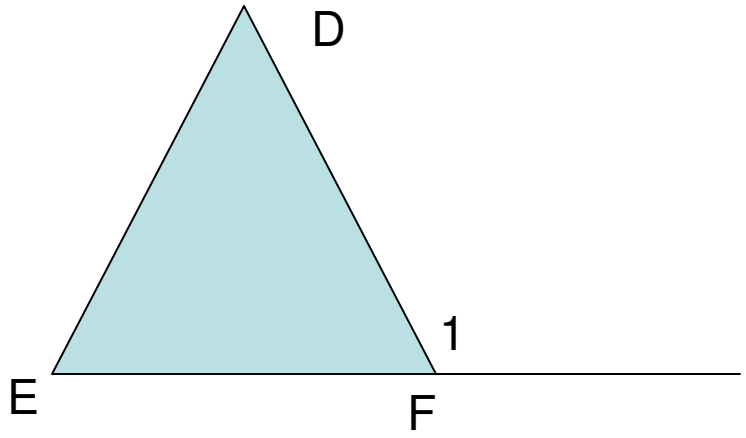
Given : $AC > BC; CE > CD$

Prove : $AE > BD$



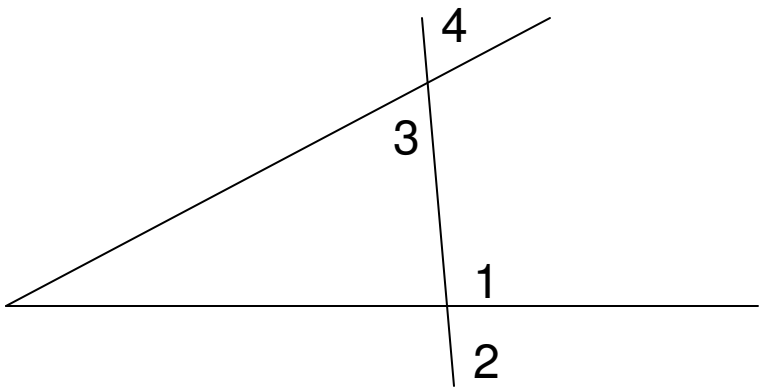
Given : $\measuredangle 1$ is and exterior angle

Prove : $\measuredangle 1 > \measuredangle D; \measuredangle 1 > \measuredangle E$



Given : $\measuredangle 2 > \measuredangle 1$

Prove : $\measuredangle 2 > \measuredangle 4$



6.3 Indirect Proof

We will be using _____

_____.

Lets look at an example.

Lets suppose after walking home, Joe enters the house carrying a dry umbrella. You can conclude that it is not raining outside. Why?

_____

_____

Steps for solving an Indirect Proof:

- _____

_____

- _____

_____

- _____

_____

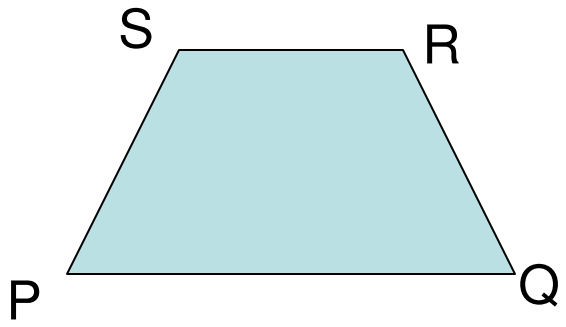
_____

_____

Lets try one, these will be written as a paragragh.

Given : *SRQP* is a trapezoid

Prove: PQ ≠ SR



6.4

Inequalities

Inequalities for one Triangle

Theorem 6.2: _____

_____

_____

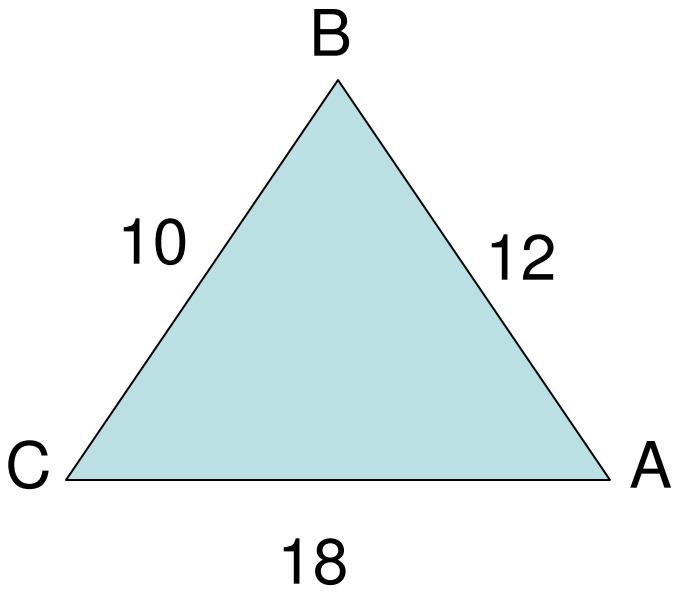
_____

Theorem 6.3: _____

_____

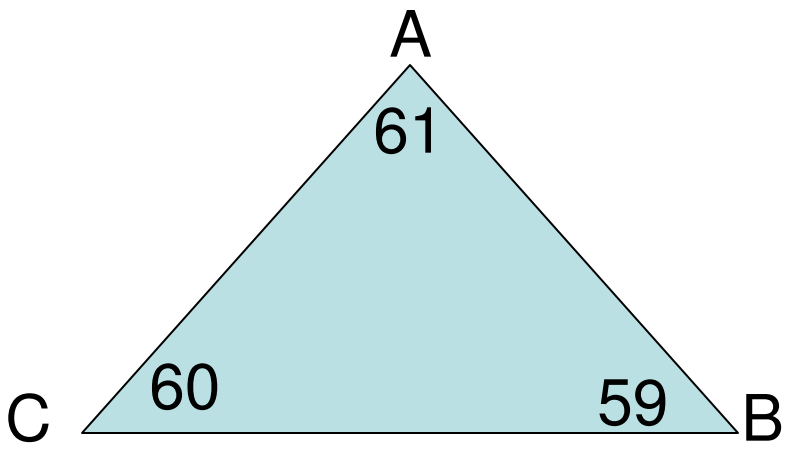
_____

_____



List angles from Largest to smallest:

____ ____ ____



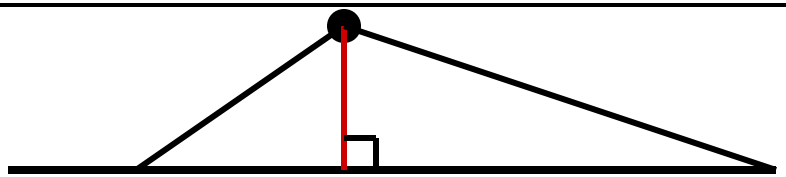
List sides from Largest to smallest:

____ ____ ____

Corollary 1: _____

_____

_____



Theorem 6.4: _____

_____

_____

When given 2 sides of a triangle you can find a range that the third side will be between.

- _____

_____

_____

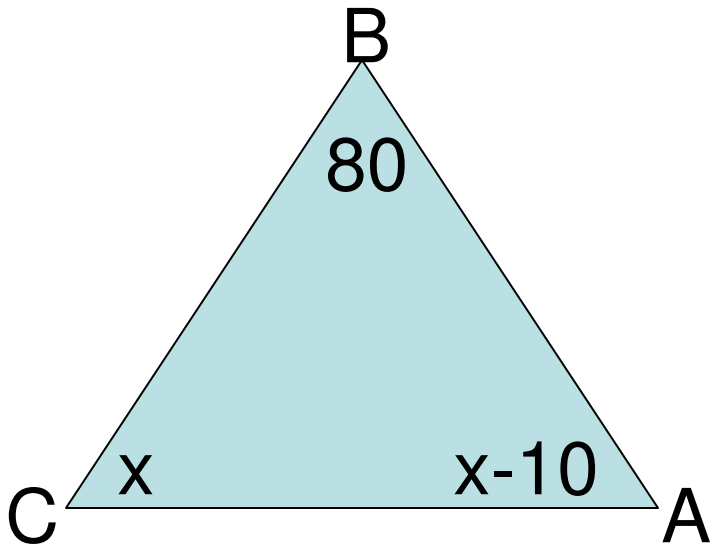
$10, 12,$ _____

$25, 26,$ _____

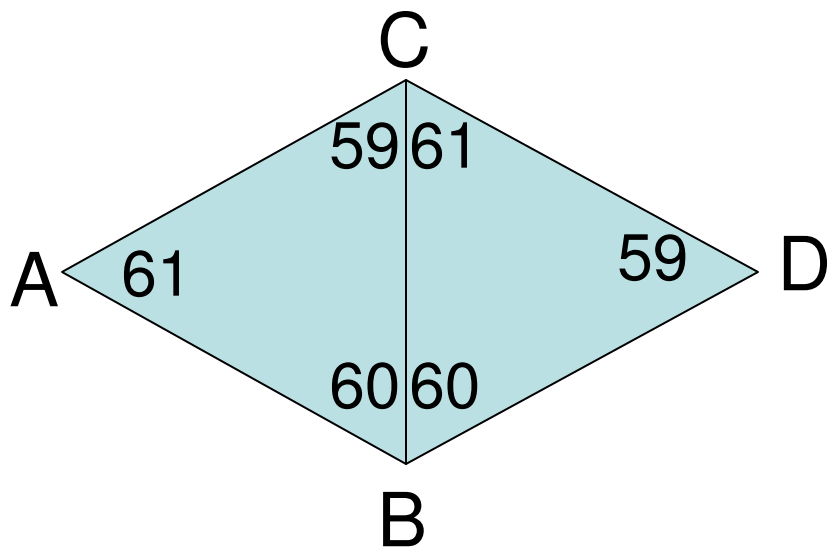
$y, y+2,$ _____

Find out if each is a triangle, given the sides:

1. 6,8,20
2. 2.5, 5, 4.1
3. 3, 4, 5
4. 6, 4, 2
5. 6, 5, 6



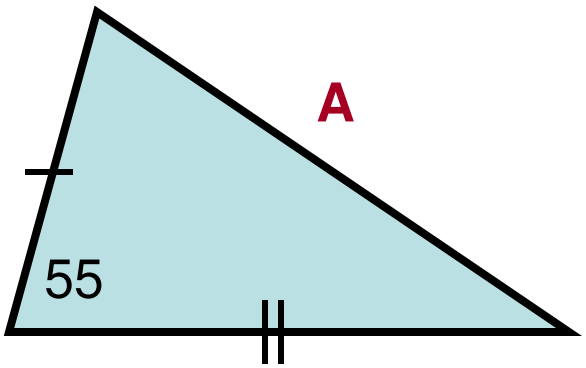
Which side is the longest?

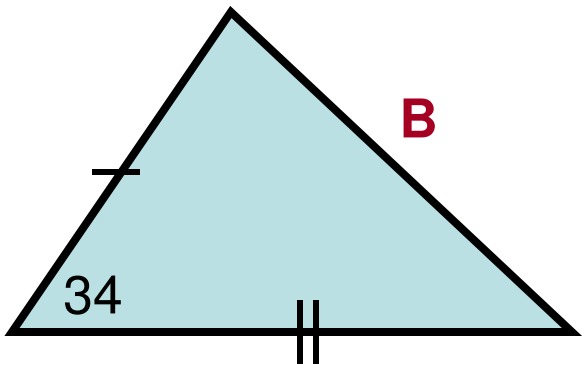

C
59
61
A
61
59
D
60
60
B

_____ > _____ > _____ > _____ > _____

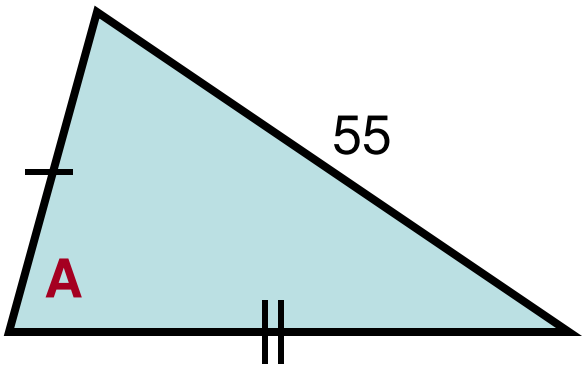
6.5 Inequalities for 2 Triangles

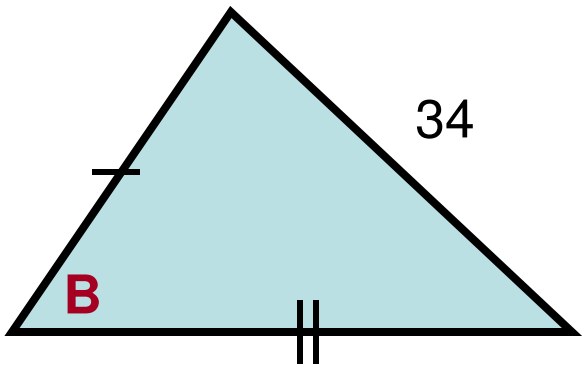
Theorem 6-5: SAS Inequality





Theorem 6-5: SSS Inequality

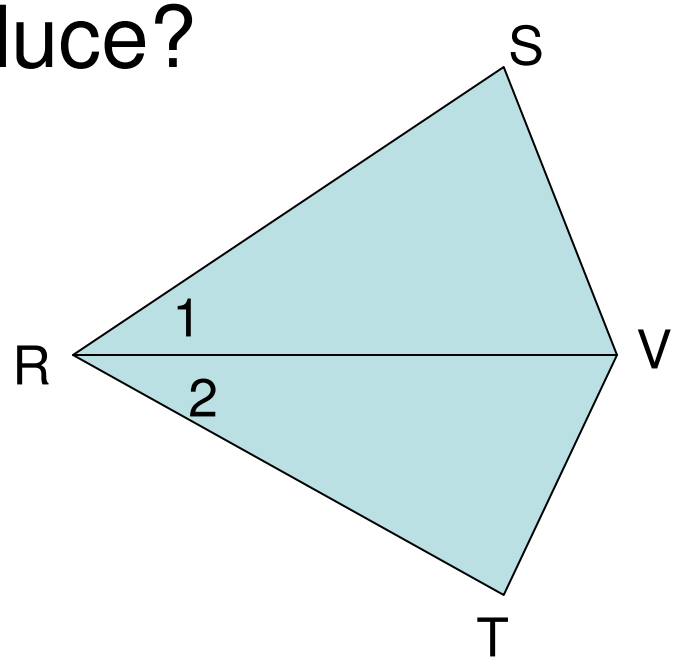




Example:

$Given: RS \cong RT; \measuredangle 1 > \measuredangle 2$

What can you deduce?



- _____

- _____

_____

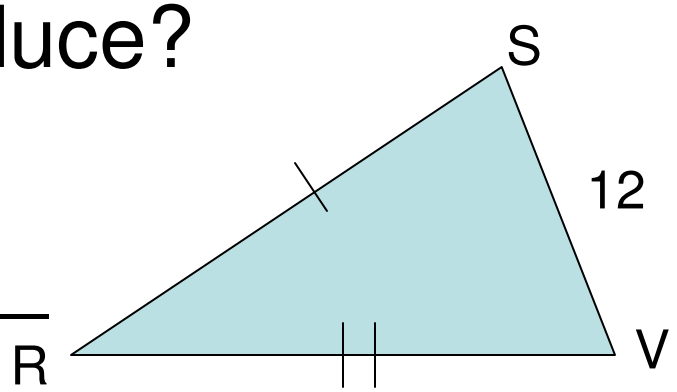
_____

_____

Example:

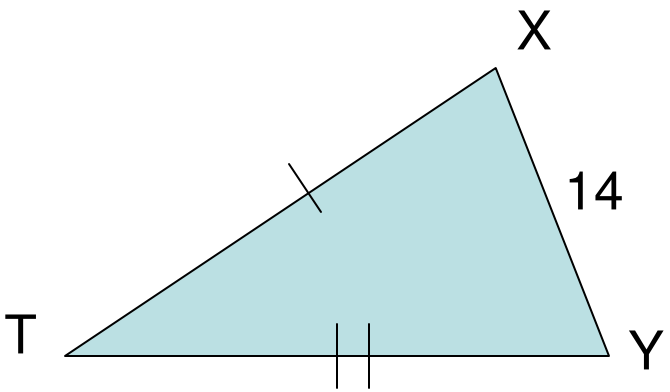
Given : Marked on Drawing

What can you deduce?



- _____

- _____



Example:

Given : Marked on Drawing

What can you deduce?

- _____

- _____