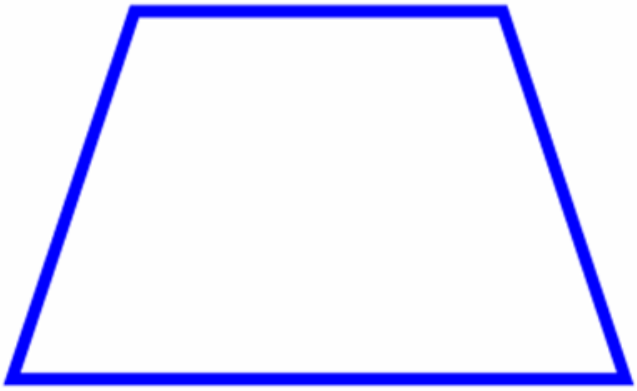
Def. Trapezoid

A quad. with exactly 1 pair of opp. sides being ||



Def. Isosceles Trap.

A Trap. with ≅ legs

Th. 6.21

If a trap. is isosceles, then each pair of base ∠'s is ≅.

Th. 6.22

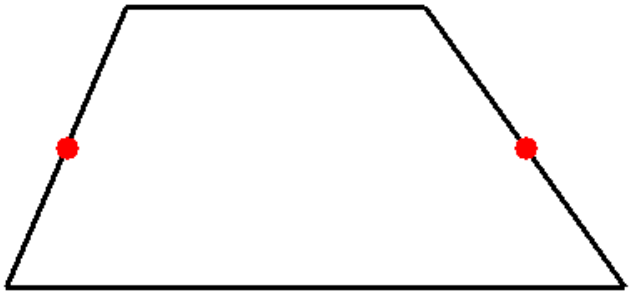
If a trap. has 1 pair of ≅ base ∠'s, then it is an isosceles trap.

Th. 6.23

A trap. is isosceles if and only if its diagonals are ≅.

Def. Midsegment of a Trapezoid

A segment that joins the midpts. of the legs of the trap.



Th. 6.24

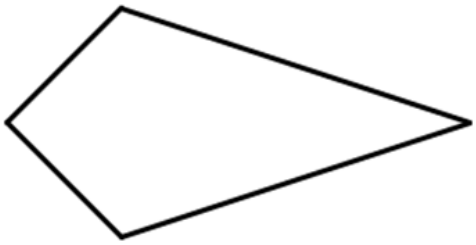
The midsegment of a trap. is || to each base and its measure is one half the sum of the lengths of the bases.

In other words.....

The 2 bases add to be DOUBLE the midsegment

Def. Kite

A quad. with exactly two pairs of consecutive ≅ sides.



Th. 6.25

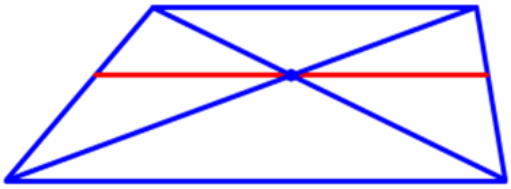
If a quad. is a kite, then its diagonals are ⊥.

Th. 6.26

If a quad. is a kite, then exactly on pair of opposite ∠'s is ≅.

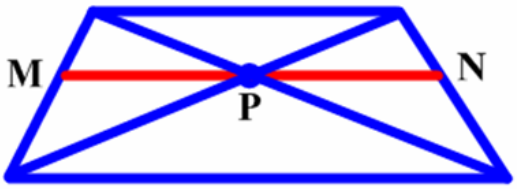
Def. Harmonic Mean

A segment that is $\parallel$ to the 2 bases and contains the intersection of the 2 diagonals.



Harmonic Mean Th. 1

The intersection of the 2 diagonals is the midpt. of the harmonic mean.



Harmonic Mean Th. 2

The measure of the harmonic mean can be found by the following formula:

$$HM = \frac{2}{\frac{1}{b_1} + \frac{1}{b_2}}$$

Where HM is the measure of the Harmonic Mean, b_1 and b_2 are lengths of the 2 bases.