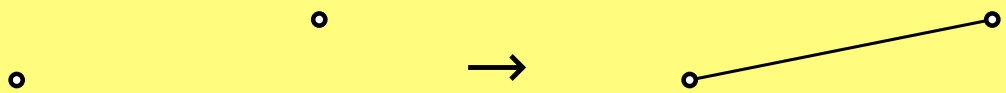
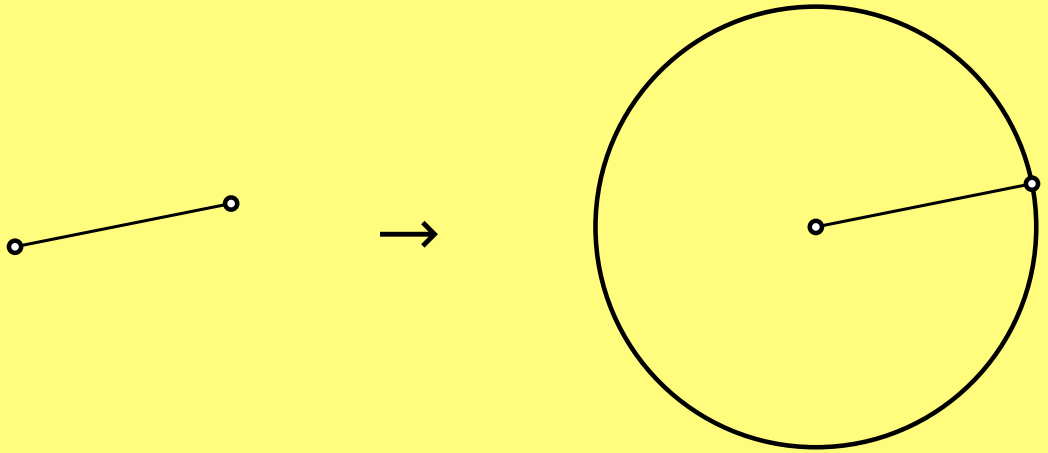
Postulate 1: draw line between points.

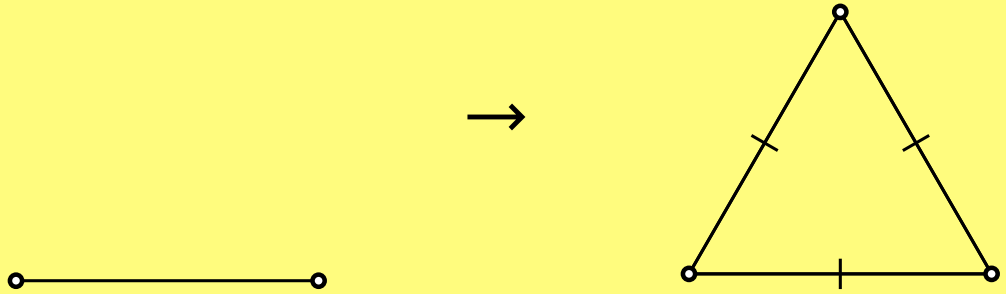


Postulate 2: extend line.

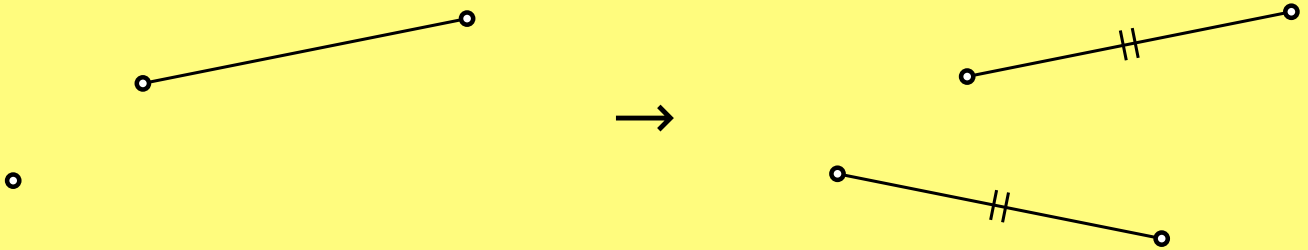
Postulate 3: draw circle.



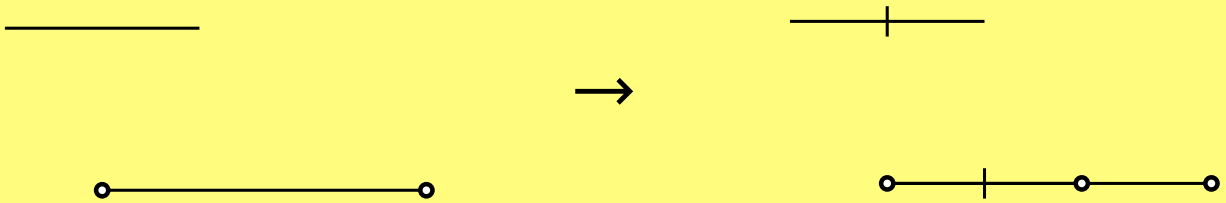
Proposition 1: draw equilateral $\triangle$.



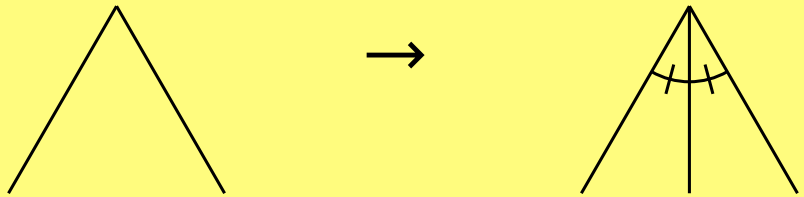
Proposition 2: move segment.



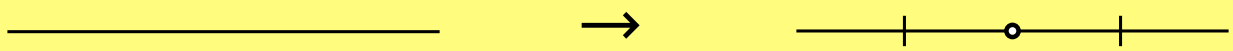
Proposition 3: cut off given length.



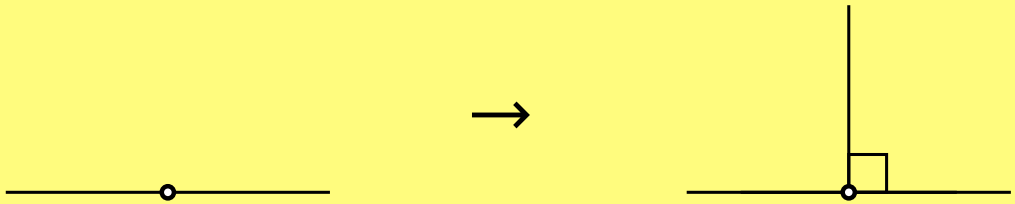
Proposition 9: bisect angle.



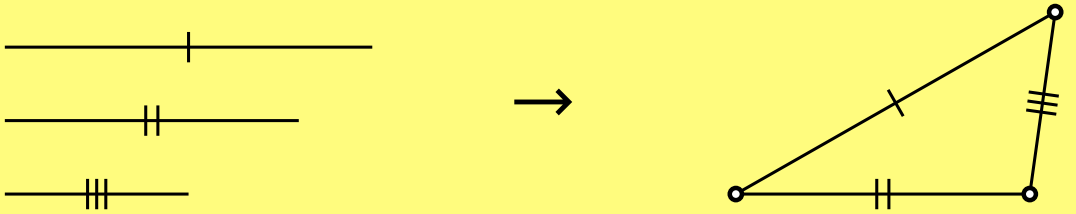
Proposition 10: bisect segment.



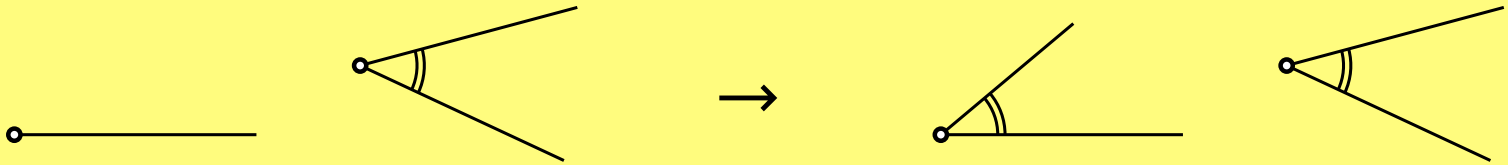
Proposition 11: draw perpendicular.



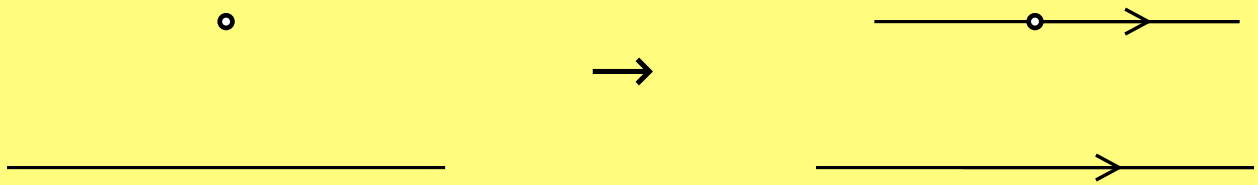
Proposition 22: draw $\triangle$ from three segments.



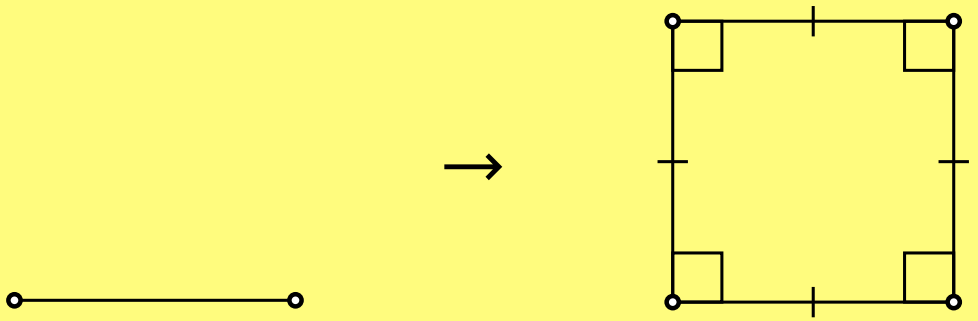
Proposition 23: move angle.



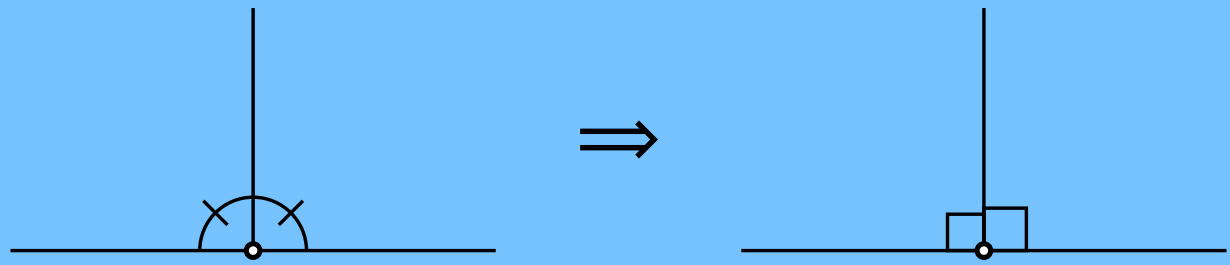
Proposition 31: draw parallel through point.



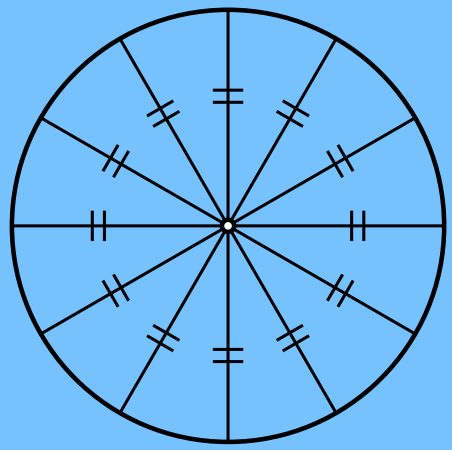
Proposition 46: draw a square.



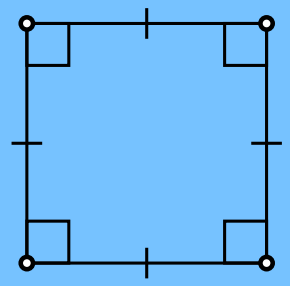
Definition 10: right angle.



Definition 15: circle.



Definition 22: square.



Common Notion 1: transitivity.

$$\begin{aligned} & a = c \\ & b = c \\ \Longrightarrow \quad & a = b \end{aligned}$$

Common Notion 2: additivity.

$$
\begin{aligned}
& a = c \\
& b = d \\
\Longrightarrow \quad & a + b = c + d
\end{aligned}
$$

Common Notion 3: subtractivity.

$$\begin{aligned} & a = c \\ & b = d \\ \Rightarrow \quad & a - b = c - d \end{aligned}$$

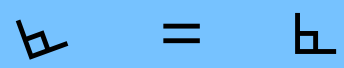
Common Notion 4:

$$\text{coincide} \implies \text{equal}$$

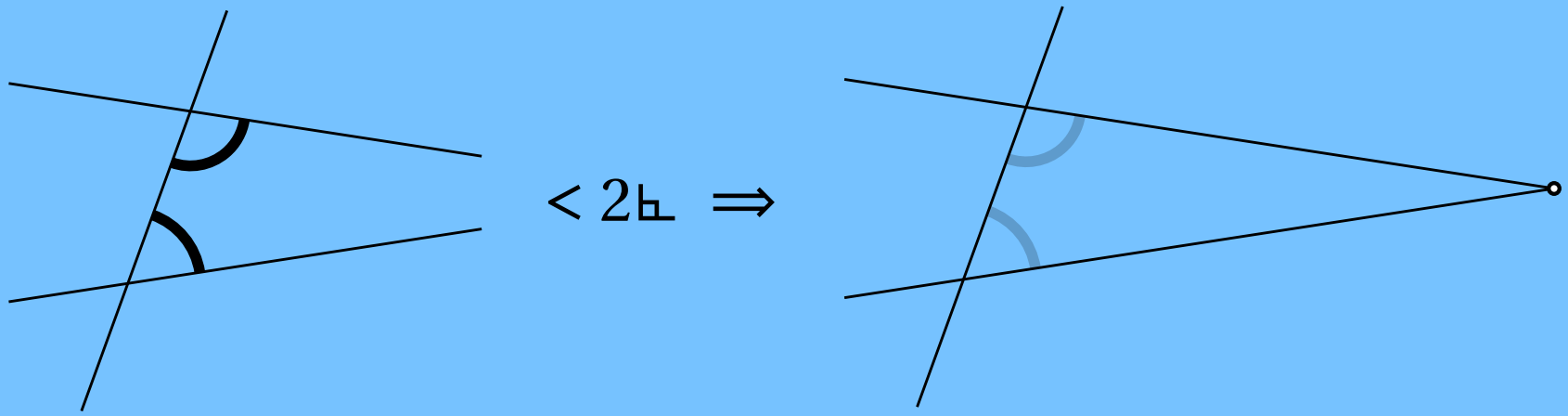
Common Notion 5:

the whole is greater than the part

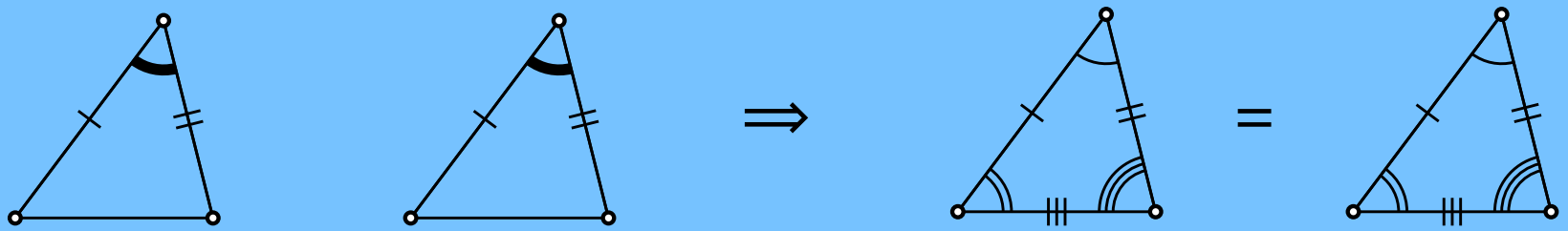
Postulate 4: identity of right angles.



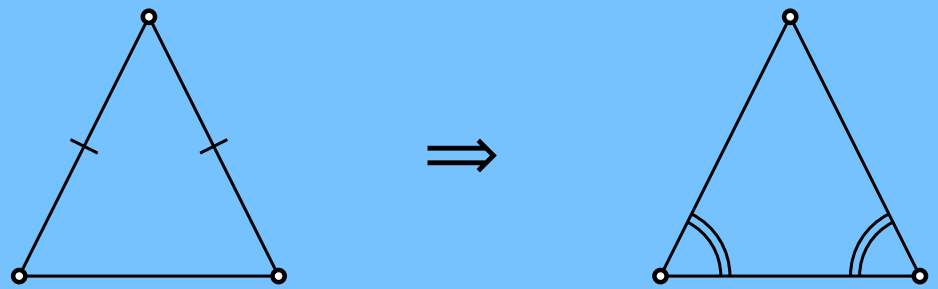
Postulate 5: condition for crossing.



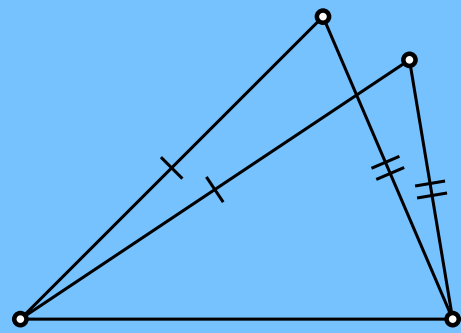
Proposition 4: SAS $\triangle$ congruence.



Proposition 5: isosceles $\triangle \Rightarrow$ base angles equal.

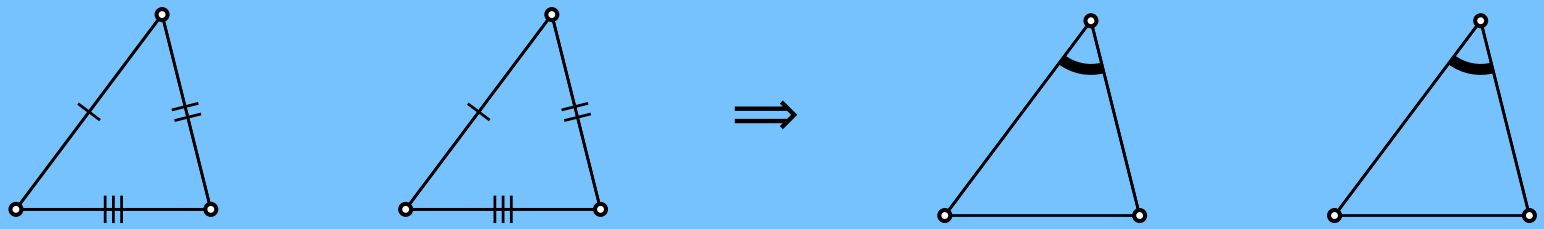


Proposition 7: SSS uniqueness.

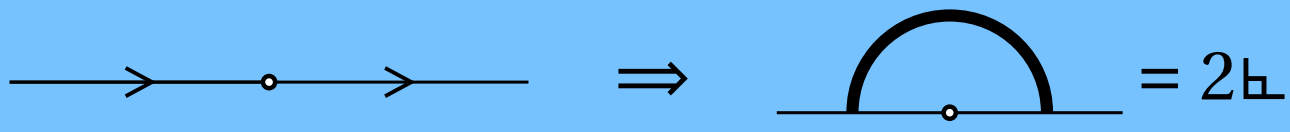


$\Rightarrow \quad \bot$

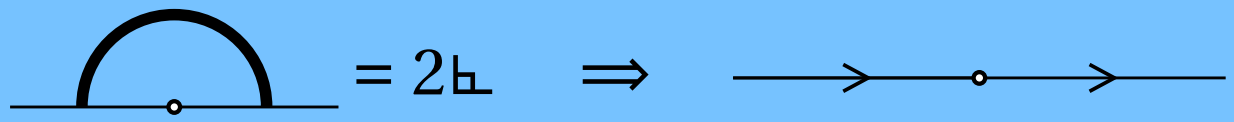
Proposition 8: SSS $\triangle$ congruence.



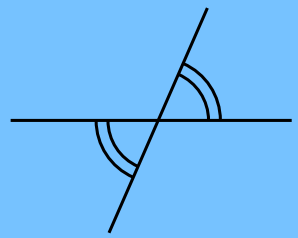
Proposition 13: angle on one side of straight line = 2∟.



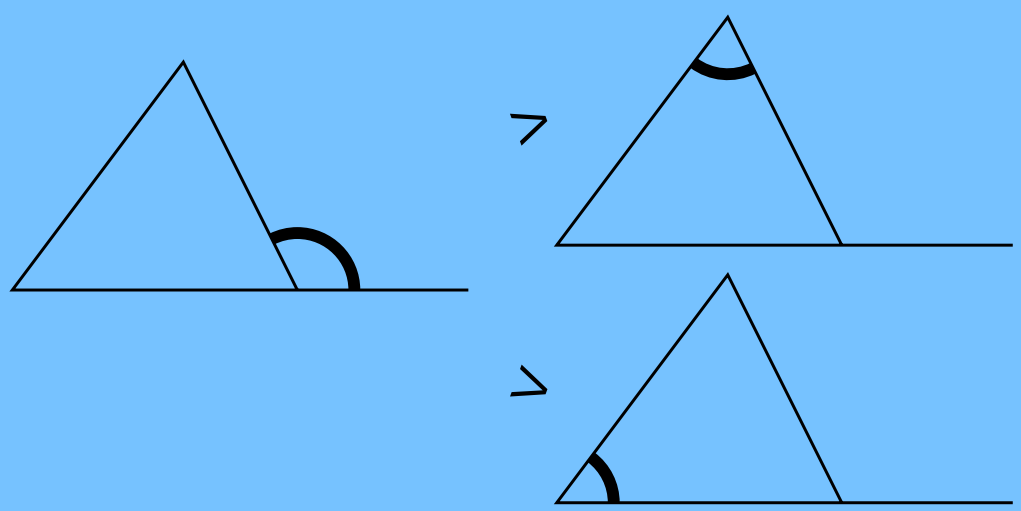
Proposition 14: angle on one side = 2∟ ⟹ straight line.



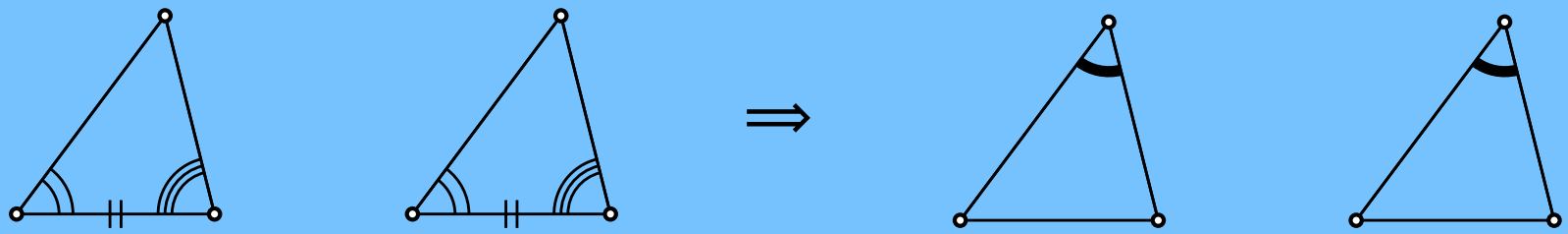
Proposition 15: vertical angles equal.



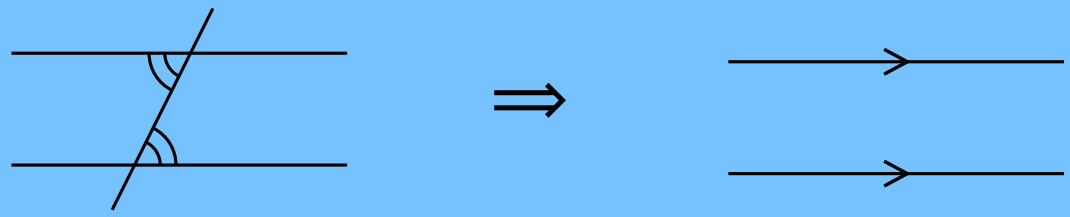
Proposition 16: $\triangle$ external angle > each opposite internal angle.



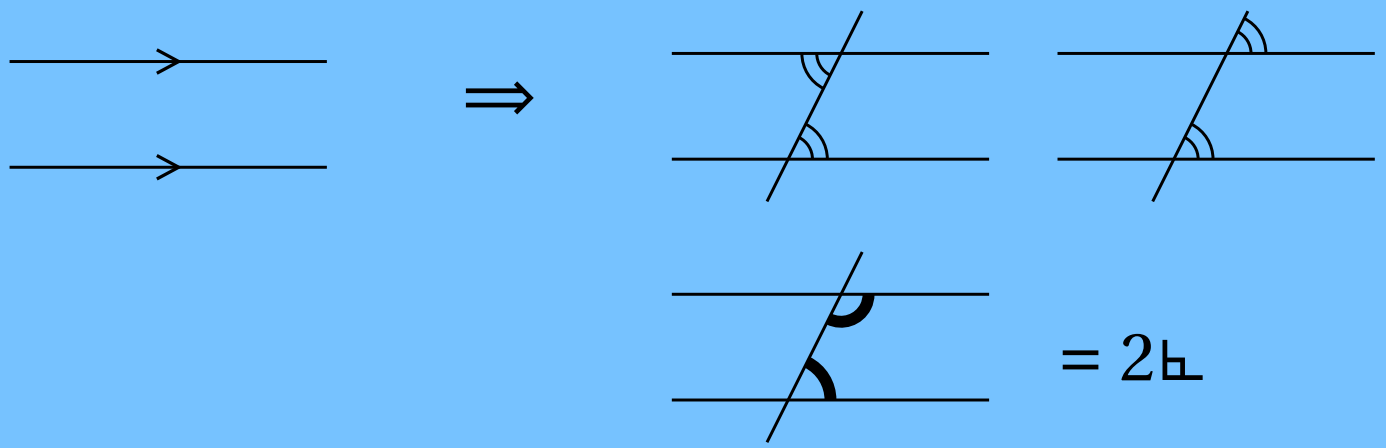
Proposition 26: ASA $\triangle$ congruence.



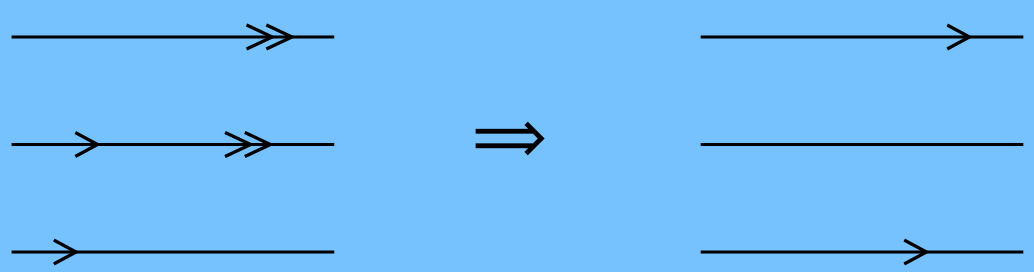
Proposition 27: alternate angles equal $\Rightarrow$ parallel.



Proposition 29: parallel $\Rightarrow$ alternate angles equal, … internal angles = 2⊾.



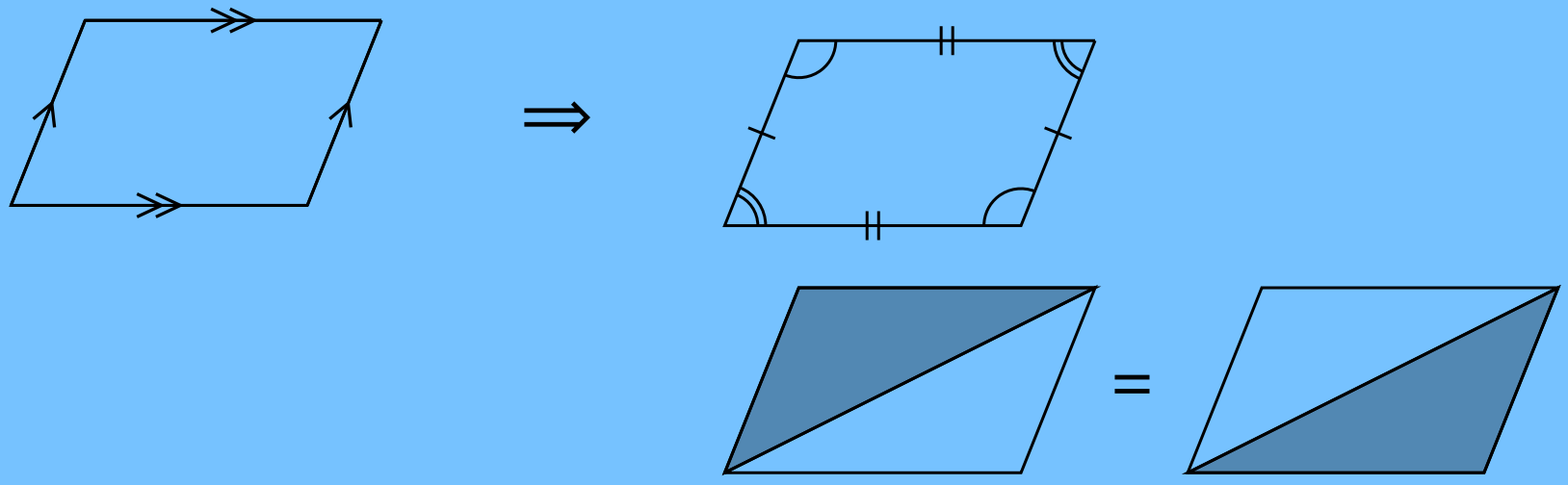
Proposition 30: parallel to same $\Rightarrow$ parallel to each other.



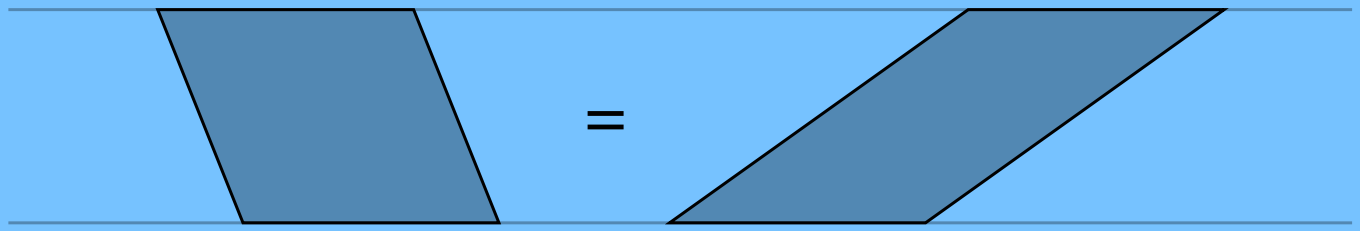
Proposition 32: $\triangle$ angle sum = $2\llcorner$.

= $2\llcorner$

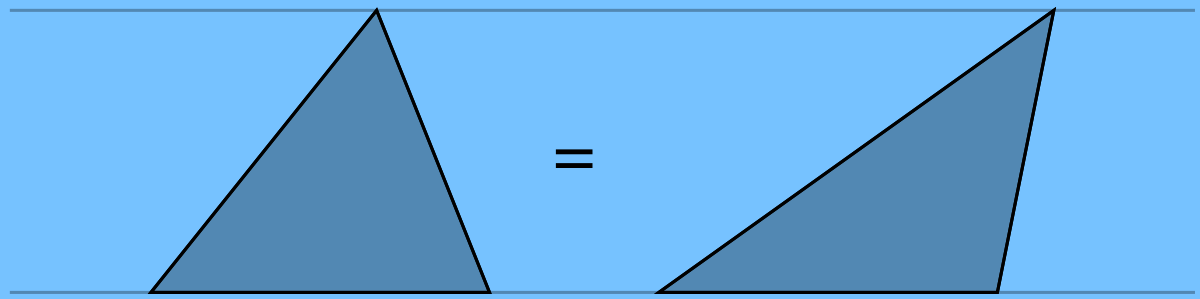
Proposition 34: $\parallel\!\!\square \Rightarrow$ opposite sides, angles equal; diagonal bisects.



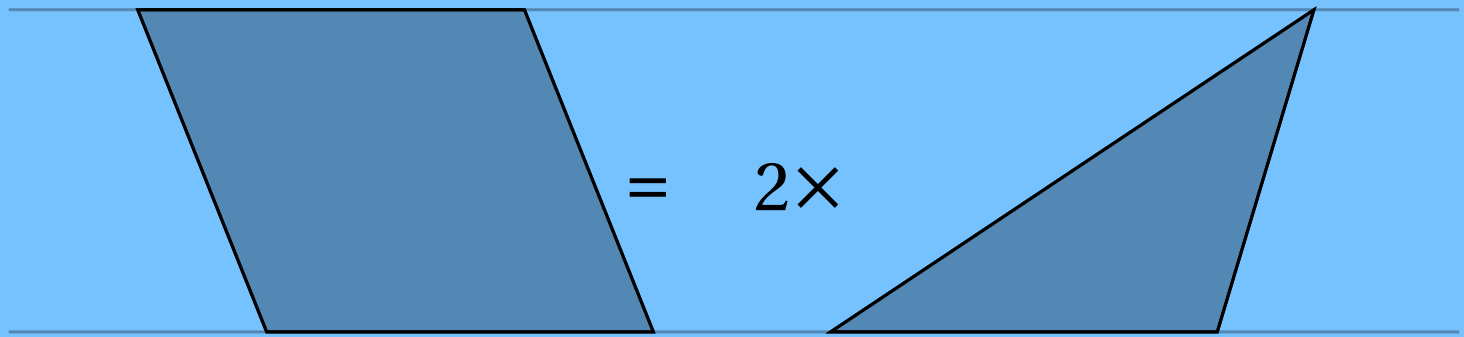
Proposition 35: $\parallel\!\square$ w same base, height $\Rightarrow$ equal area.



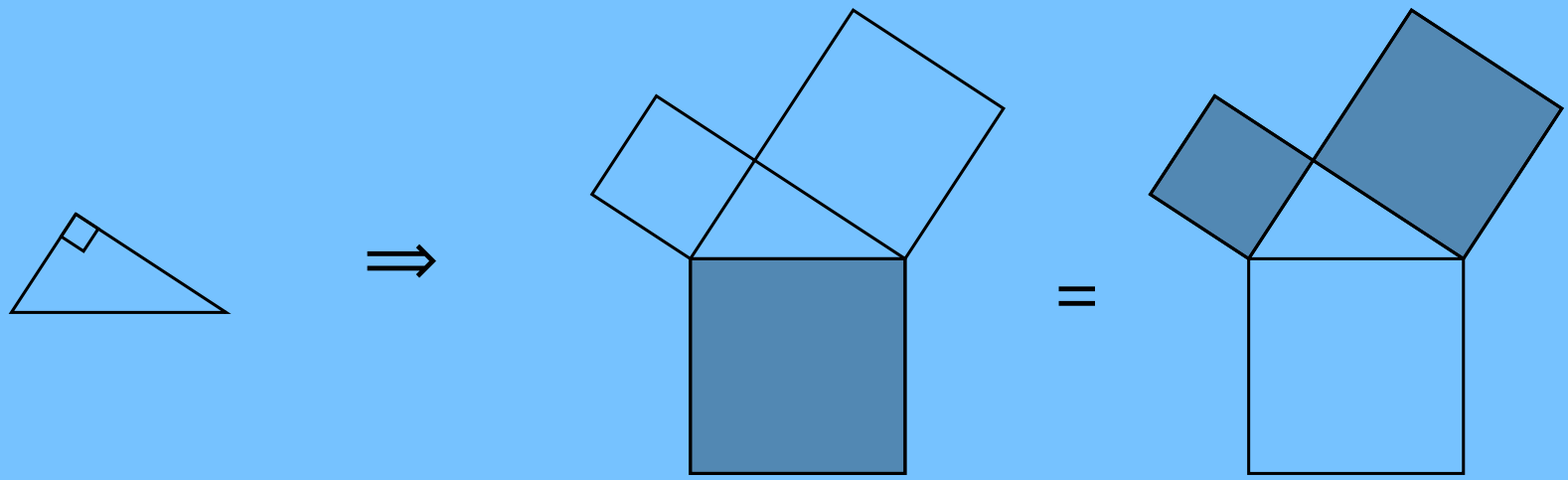
Proposition 37: $\triangle$ w same base, height $\Rightarrow$ equal area.



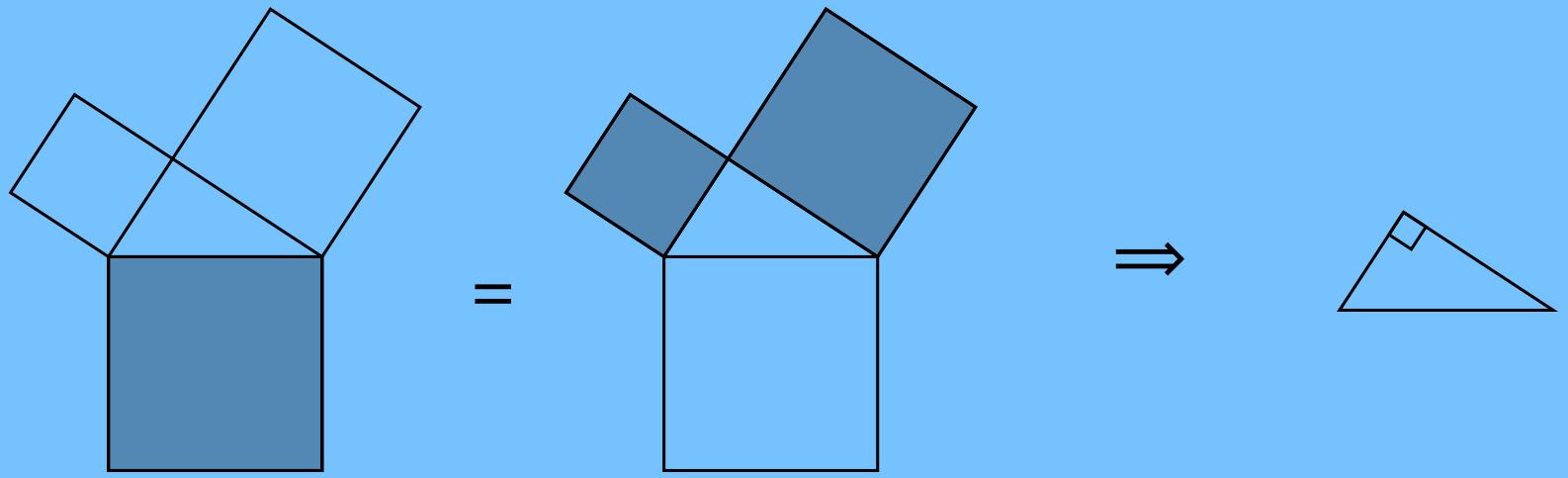
Proposition 41: ▱ area = 2× corresponding △ area.



Proposition 47: right-angle $\triangle \Longrightarrow a^2 + b^2 = c^2$.



Proposition 48: $a^2 + b^2 = c^2 \Rightarrow$ right-angle $\triangle$.



Suppose the opposite of what we want to prove.

The opposite of the contradictory supposition.

Collecting known information.

Draw an arbitrary point.

Constructional uniqueness:

Postulate 1
Postulate 3
Proposition 31
Proposition 46
…

} produces the *only* such {

line
circle
parallel
square
…