

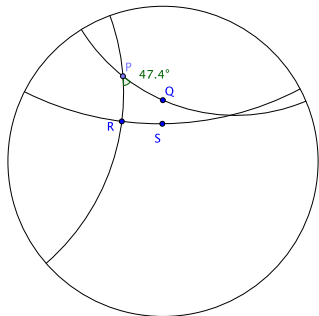
Some notes from class

2018-03-28

Set-up for the next few results

The “usual set-up”

Let R and S be points with $R \neq S$, and suppose that P is a point not on \overleftrightarrow{RS} with $\overleftrightarrow{PR} \perp \overleftrightarrow{RS}$. We will typically be interested in rays of the form \overrightarrow{PQ} , where Q is a point on the same side of \overleftrightarrow{PR} as S .



d_0

Let d_0 stand for the least upper bound of the set of all angle measures $m(\angle RPQ)$ for which \overrightarrow{PQ} intersects \overleftrightarrow{RS} .

If angle of parallelism < 90

Theorem

If the angle of parallelism for a given line ℓ and point $P \notin \ell$ is less than 90 , then there exist at least two lines on P parallel to ℓ .

Theorem

Suppose, for a given line ℓ and point $P \notin \ell$, that there exist at least two lines on P parallel to ℓ . Then the angle of parallelism for P and ℓ is less than 90 .

Hyperbolic Parallel Postulate

Hyperbolic Parallel Postulate (HPP)

For every line ℓ and every point $P \notin \ell$, the angle of parallelism for P and ℓ is less than 90° .

From now on: We assume the hyperbolic parallel postulate holds.