Divide students in half to work thru these together then present.

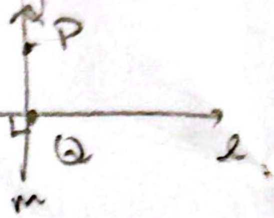
Thm 7.2 The horo-parallels to l @ P have the same angle of parallelism.

Pf: Assume towards ⊗

let K_l and K_R be left + right horo-parallels to l through P

WLOG assume left angle of parallelism < right angle of parallelism

Let $Q = l \cap m$ + ϕ be the fold w/ crease m.



Since ϕ preserves lines and angle measures

$\phi(K_l)$ is some line K thru P

with angle less than the right angle of parallelism.

Since the right angle of parallelism was minimal for ∥ lines

$\Rightarrow K$ is not ∥ and intersects l, call it R

By applying ϕ again $\Rightarrow \phi(R)$ is intersection of K_r and l ⊗

Cor 7.2 A All angles of parallelism are acute.

Pf: Let K_l + K_R be left + right horo-parallels to l through P. Let $m \perp$ to l thru P.

Let $A_l, B_l \in K_l$ on opp sides of m. Similarly $A_r, B_r \in K_r$.

WLOG let A_l + A_r be on the same side of m.

Thm 7.2 $\Rightarrow \mu(\angle A_l PQ) = \mu(\angle B_l PQ)$

B/c vertical angles are congruent $\mu(\angle A_l PQ) = \mu(\angle RPB_r)$

and $\mu(\angle B_l PQ) = \mu(\angle RPA_r)$

Notice $\mu(\angle A_r P A_l) \neq 0$ b/c $K_r \neq K_l$ (by thm 7.1)

But Postulate Protractor $\Rightarrow$ angles around a point are in 2π radians

So $4\mu(A_l PQ) < 2\pi \Rightarrow \mu(A_l PQ) < \pi/2$ so acute.