

9-4 Arcs & Chords

\overline{RS} creates 2 arcs.

Intro:



\widehat{RS} & \widehat{RTS}

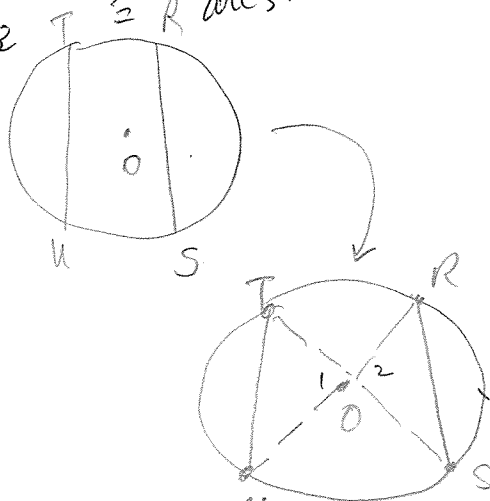
Say " \widehat{RS} is the arc of chord \overline{RS} ."

(I) Thm:

In the same circle or in \cong circles:

(1) \cong arcs have \cong chords.

(2) \cong chords have \cong arcs.



Proof of Thm

Given: $\widehat{RS} \cong \widehat{TU}$

Prove: $\overline{RS} \cong \overline{TU}$

- ① Draw $\overline{OT}, \overline{OU}, \overline{OR}, \overline{OS}$. \rightarrow ② $\overline{OT} \cong \overline{OU} \cong \overline{OR} \cong \overline{OS}$ } \rightarrow ⑤ $\triangle TOU \cong \triangle ROS$
- ③ $\widehat{RS} \cong \widehat{TU} \rightarrow$ ④ $\angle 1 \cong \angle 2$
- ⑥ $\overline{RS} \cong \overline{TU}$

① 2 pts determine a line

② Radii of same circle are \cong .

③ Given

④ In same circle or \cong circles,

2 minor arcs are \cong if & only if central \angle s \cong . \cong central \angle s have \cong arcs.

⑤ SAS \cong SAS

⑥ CPCTC