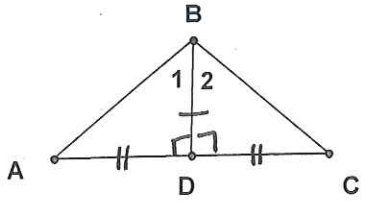
Triangle Congruence

Name: Key

Given: $\overline{AD} \cong \overline{CD}$ and $\overline{AC} \perp \overline{BD}$

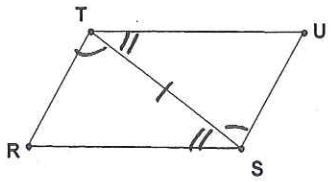
Prove: $\angle 1 \cong \angle 2$



- $\overline{AC} \perp \overline{BD}$ — Given
- $m\angle BDA = 90$ — Def of $\perp$
- $m\angle BDC = 90$ — Def of $\perp$
- $\overline{BD} \cong \overline{BD}$ — Reflexive
- $\angle BDA \cong \angle BDC$ — All rt $\angle$s are $\cong$
- $\overline{AD} \cong \overline{CD}$ — Given
- $\triangle ADB \cong \triangle CDB$ — SAS
- $\angle 1 \cong \angle 2$ — CPCTC

Given: $\overline{TR} \parallel \overline{US}$ and $\overline{RS} \parallel \overline{TU}$

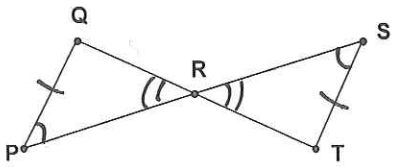
Prove: $\angle R \cong \angle U$



- $\overline{TR} \parallel \overline{US}$ — Given
- $\overline{RS} \parallel \overline{TU}$ — Given
- $\overline{TS} \cong \overline{TS}$ — Reflexive
- $\angle RTS \cong \angle UST$ — AIA
- $\angle RST \cong \angle UTS$ — AIA
- $\triangle RST \cong \triangle UTS$ — ASA
- $\angle R \cong \angle U$ — CPCTC

Given: $\angle P \cong \angle S$, $\overline{QP} \cong \overline{ST}$

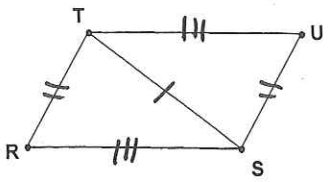
Prove: $\overline{PR} \cong \overline{SR}$



- $\angle P \cong \angle S$ — Given
- $\overline{QP} \cong \overline{ST}$ — Given
- $\angle QRP \cong \angle TRS$ — Vert $\angle$s Thm
- $\triangle QRP \cong \triangle TRS$ — AAS
- $\overline{PR} \cong \overline{SR}$ — CPCTC

Given: TUSR is a parallelogram

Prove: $\Delta TRS \cong \Delta SUT$



$\overline{TS} \cong \overline{TS}$
Reflexive

$\overline{TR} \cong \overline{US}$
def ||ogram

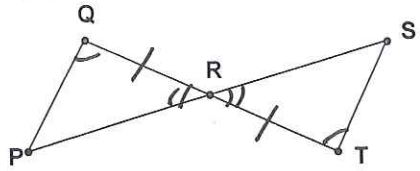
$\overline{TU} \cong \overline{RS}$
def ||ogram

TUSR ||ogram
Given

$\Delta TRS \cong \Delta SUT$
SSS

Given: R is the midpoint of $\overline{QT}$ and $\angle T \cong \angle Q$

Prove: $\overline{QP} \cong \overline{TS}$



$\angle QRP \cong \angle TRS$
Vert Ls Thm

$\angle T \cong \angle Q$
Given

R is mp $\overline{QT}$
Given

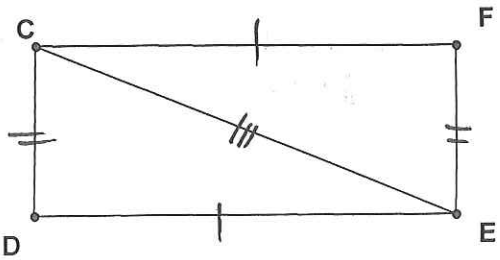
$\overline{QR} \cong \overline{RT}$
def of mp

$\Delta QRP \cong \Delta TRS$
ASA

$\overline{QP} \cong \overline{TS}$
CPCTC

Given: CDEF is a rectangle

Prove: $\Delta DCE \cong \Delta FEC$



CDEF Rect
Given

$\overline{CD} \cong \overline{FE}$
Def rect

$\overline{CF} \cong \overline{DE}$
Def rect

$\overline{CE} \cong \overline{CE}$
Reflexive

$\Delta DCE \cong \Delta FEC$
SSS