EXERCISES

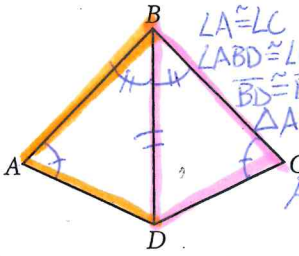
You will need

Construction tools **for Exercises 16 and 17**

For Exercises 1–9, copy the figures onto your paper and mark them with the given information. Answer the question about segment or angle congruence. If your answer is yes, write a paragraph proof explaining why. Remember to state which congruence shortcut you used. If there is not enough information to prove congruence, write "cannot be determined."

1. $\angle A \cong \angle C$, $\angle ABD \cong \angle CBD$
Is $\overline{AB} \cong \overline{CB}$? ⓗ

Given
Given
Show



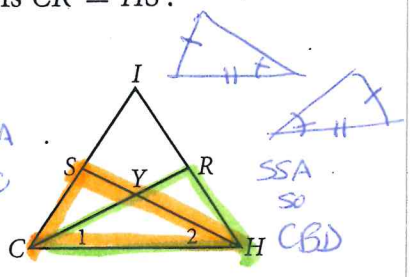
$\angle A \cong \angle C$ Given
$\angle ABD \cong \angle CBD$ "
$\overline{BD} \cong \overline{BD}$ Shared side
$\triangle ABD \cong \triangle CBD$ SAA
$\overline{AB} \cong \overline{CB}$ CPCTC

2. $\overline{CN} \cong \overline{WN}$, $\angle C \cong \angle W$
Is $\overline{RN} \cong \overline{ON}$? ⓗ

Given Given
Show

what	why
$\overline{CN} \cong \overline{WN}$	Given
$\angle C \cong \angle W$	Given
$\angle 1 \cong \angle 2$	VA are $\cong$
$\triangle CRN \cong \triangle WON$	ASA
$\overline{RN} \cong \overline{ON}$	CPCTC

3. $\overline{CS} \cong \overline{HR}$, $\angle 1 \cong \angle 2$
Is $\overline{CR} \cong \overline{HS}$?

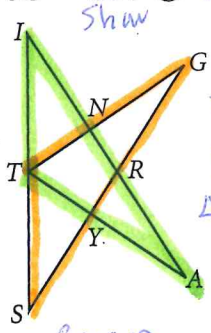


SSA
so
CBD

4. $\angle S \cong \angle I$, $\angle G \cong \angle A$
T is the midpoint of $\overline{SI}$.
Is $\overline{SG} \cong \overline{IA}$? ⓗ

Given Given
Given
Show

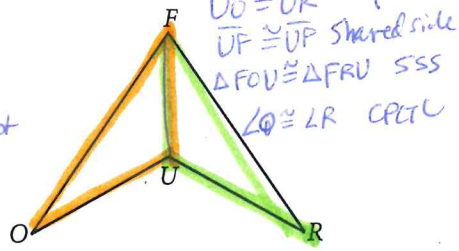
what	why
$\angle S \cong \angle I$	Given
$\angle G \cong \angle A$	Given
T is the midpt of $\overline{SI}$.	def of midpt
$\overline{ST} \cong \overline{IT}$	
$\triangle AIT \cong \triangle GST$	SAA
$\overline{SG} \cong \overline{IA}$	CPCTC



5. $\overline{FO} \cong \overline{FR}$, $\overline{UO} \cong \overline{UR}$
Is $\angle O \cong \angle R$? ⓗ

Given
Show

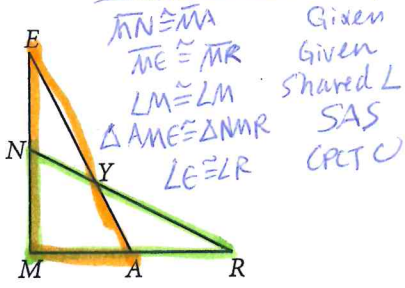
$\overline{FO} \cong \overline{FR}$	Given
$\overline{UO} \cong \overline{UR}$	?
$\overline{UF} \cong \overline{UF}$	Shared side
$\triangle FOU \cong \triangle FRU$	SSS
$\angle O \cong \angle R$	CPCTC



6. $\overline{MN} \cong \overline{MA}$, $\overline{ME} \cong \overline{MR}$
Is $\angle E \cong \angle R$?

Given Given
Show

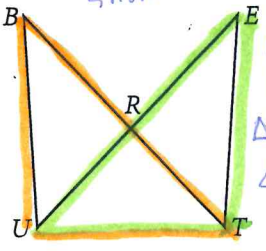
what	why
$\overline{MN} \cong \overline{MA}$	Given
$\overline{ME} \cong \overline{MR}$	Given
$\angle M \cong \angle M$	Shared $\angle$
$\triangle AME \cong \triangle NMR$	SAS
$\angle E \cong \angle R$	CPCTC



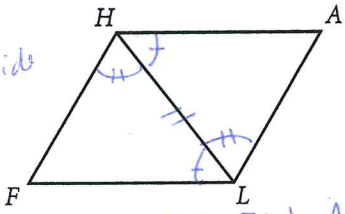
7. $\overline{BT} \cong \overline{EU}$, $\overline{BU} \cong \overline{ET}$
Is $\angle B \cong \angle E$? ⓗ

Given
Show

what	why
$\overline{BT} \cong \overline{EU}$	Given
$\overline{BU} \cong \overline{ET}$	Given
$\overline{UT} \cong \overline{TU}$	shared side
$\triangle BUT \cong \triangle ETU$	SSS
$\angle B \cong \angle E$	CPCTC



8. *HALF* is a parallelogram.
Is $\overline{HA} \cong \overline{HF}$?



$\triangle HAL \cong \triangle LFH$ by ASA
but HA ≠ HF
are not
corresponding sides

9. $\angle D \cong \angle C$, $\angle O \cong \angle A$, $\angle G \cong \angle T$. Is $\overline{TA} \cong \overline{GO}$?

AAA
Cannot be done