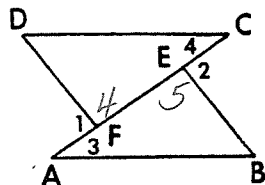


Write a flow proof for each problem.

1.

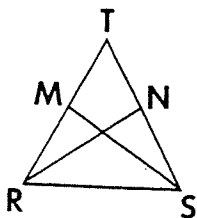


Given: \overline{AC} , $\overline{AF} \cong \overline{EC}$, $\angle 3 \cong \angle 4$, $\angle 1 \cong \angle 2$.
Prove: $\triangle ABE \cong \triangle CDF$.

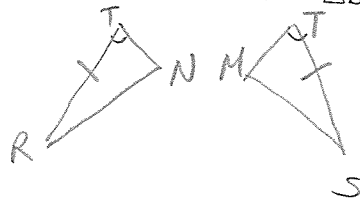
- ① $\angle 1$ & $\angle 4$ linear pair \rightarrow ② $\angle 1$ supp $\angle 4$
 $\angle 2$ & $\angle 5$ linear pair \rightarrow ③ $\angle 2$ supp $\angle 5$
 ④ $\angle 1 \cong \angle 2$ } \rightarrow ⑤ $\angle 4 \cong \angle 5$
 ⑥ $\angle 3 \cong \angle 4$
 ⑦ $\overline{AF} \cong \overline{EC} \rightarrow$ ⑧ $\overline{AE} \cong \overline{FC}$ } ⑨ $\triangle ABE \cong \triangle CDF$

- ① Def linear pair
 ② linear pair postulate
 ③ same as #2
 ④ Given
 ⑤ \cong supplements thm
 ⑥ Given
 ⑦ Given
 ⑧ Common segment thm
 ⑨ ASA \cong ASA

2.



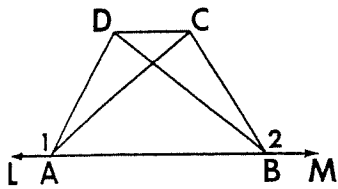
Given: $\overline{TR} \cong \overline{TS}$, $\overline{MR} \cong \overline{NS}$.
Prove: $\triangle RTN \cong \triangle STM$.



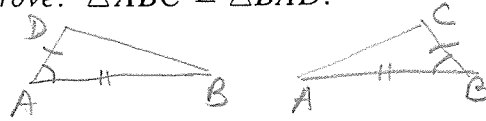
- ① $\overline{TR} \cong \overline{TS} \rightarrow$ ② $TR = TS$
 ③ $TR = TM + MR$
 ④ $TS = TN + NS$ } \rightarrow ⑤ $TM + MR = TN + NS$
 ⑥ $\overline{MR} \cong \overline{NS} \rightarrow$ ⑦ $MR = NS$ } ⑧ $TM = TN$
 ⑨ $TR = TS$
 ⑩ $\angle T \cong \angle T$

- ① Given
 ② Def \cong segmts
 ③ Segment Addition Postulate
 ④ same as 3
 ⑤ Substitution
 ⑥ Given
 ⑦ Def \cong segmts
 ⑧ Subtraction Prop.
 ⑨ Given
 ⑩ Reflexive Prop
 ⑪ SAS \cong SAS
 ⑫ $\triangle RTN \cong \triangle STM$

3.



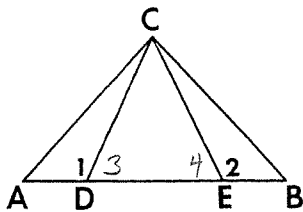
Given: $\overline{DM}, \overline{CB} \cong \overline{DA}, \angle 2 \cong \angle 1$.
 Prove: $\triangle ABC \cong \triangle BAD$.



① $\angle 2$ & $\angle CBA$ linear pair \rightarrow ② $\angle 2$ supp $\angle CBA$
 $\angle 1$ & $\angle DAL$ linear pr. \rightarrow ③ $\angle 1$ supp $\angle DAL$ } \rightarrow ⑤ $\angle CBA \cong \angle DAL$
 ④ $\angle 2 \cong \angle 1$ }
 ⑥ $\overline{CB} \cong \overline{DA}$ } \rightarrow ⑧ $\triangle ABC \cong \triangle BAD$
 ⑦ $\overline{AB} \cong \overline{AB}$

- ① Def linear pair
- ② linear pair postulate
- ③ same as #2
- ④ Given
- ⑤ \cong supplements thm
- ⑥ Given
- ⑦ Reflexive Prop.
- ⑧ SAS \cong SAS

4.



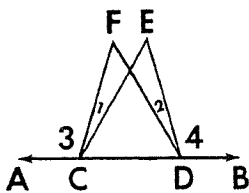
Given: $\overline{AB}, \overline{AD} \cong \overline{EB}, \angle A \cong \angle B, \angle 1 \cong \angle 2$.
 Prove: $\triangle AEC \cong \triangle BDC$.



① $\angle 1$ & $\angle 3$ linear pair \rightarrow ② $\angle 1$ supp $\angle 3$
 $\angle 2$ & $\angle 4$ linear pair \rightarrow ③ $\angle 2$ supp $\angle 4$ } \rightarrow ⑤ $\angle 3 \cong \angle 4$
 ④ $\angle 1 \cong \angle 2$ }
 ⑥ $\overline{AD} \cong \overline{EB} \rightarrow$ ⑦ $\overline{AE} \cong \overline{DB}$ } \rightarrow ⑨ $\triangle AEC \cong \triangle BDC$
 ⑧ $\angle A \cong \angle B$

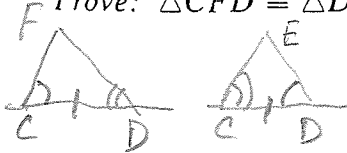
- ① Def linear pair
- ② linear pair postulate
- ③ \angle linear pair postulate
- ④ Given
- ⑤ \cong supplements thm
- ⑥ Given
- ⑦ Common segment thm
- ⑧ Given
- ⑨ ASA \cong ASA

5.



Given: \overleftrightarrow{AB} , $\angle 1 \cong \angle 2$, $\angle 3 \cong \angle 4$.

Prove: $\triangle CFD \cong \triangle DEC$.



- ① $\angle 3$ & $\angle FCD$ linear pair \rightarrow ② $\angle 3$ supp $\angle FCD$
 $\angle 4$ & $\angle EDC$ linear pair \rightarrow ③ $\angle 4$ supp $\angle EDC$
 ④ $\angle 3 \cong \angle 4$ } \rightarrow ⑤ $\angle FCD \cong \angle EDC$

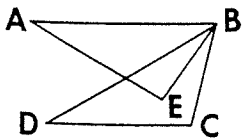
⑥ $m\angle FCD = m\angle EDC$ } ⑨ $m\angle FCD - m\angle 1 = m\angle EDC - m\angle 2$

⑦ $\angle 1 \cong \angle 2 \rightarrow$ ⑧ $m\angle 1 = m\angle 2$

⑩ $m\angle ECD = m\angle FDC$ \rightarrow ⑪ $\angle ECD \cong \angle FDC$
 ⑫ $\overline{CD} \cong \overline{CD}$

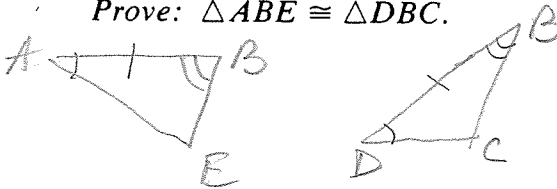
\rightarrow ⑬ $\triangle CPD \cong \triangle DE$

6.



Given: $\overline{AB} \cong \overline{DB}$, $\angle A \cong \angle D$, $\angle DBA \cong \angle CBE$.

Prove: $\triangle ABE \cong \triangle DBC$.



- ① $\angle DBA \cong \angle CBE \rightarrow$ ② $\angle ABE \cong \angle DBC$
 ③ $\overline{AB} \cong \overline{DB}$
 ④ $\angle A \cong \angle D$ } \rightarrow ⑤ $\triangle ABE \cong \triangle DBC$

① Given

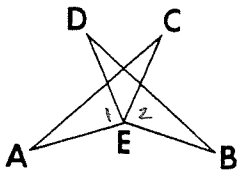
② Common angle Thm

③ Given

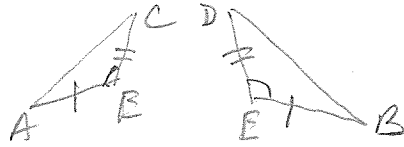
④ Given

⑤ ASA \cong ASA

7.



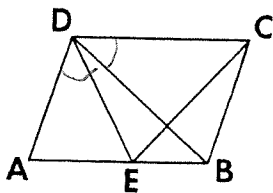
Given: $\overline{AE} \cong \overline{BE}$, $\overline{ED} \cong \overline{EC}$, $\overline{DE} \perp \overline{AE}$, $\overline{CE} \perp \overline{EB}$.
 Prove: $\triangle AEC \cong \triangle BED$.



- ① $\overline{DE} \perp \overline{AE} \rightarrow$ ② $\sphericalangle 1$ is Rt. \sphericalangle } \rightarrow ④ $\sphericalangle 1 \cong \sphericalangle 2$ \rightarrow ⑤ $\triangle AEC \cong \triangle BED$
 $\overline{CE} \perp \overline{EB} \rightarrow$ ③ $\sphericalangle 2$ is Rt. \sphericalangle }
 ⑥ $\overline{AE} \cong \overline{BE}$
 ⑦ $\overline{ED} \cong \overline{EC}$ } \rightarrow ⑧ $\triangle AEC \cong \triangle BED$

- ① Given
 ② \perp lines form Rt. \sphericalangle s
 ③ same as 2
 ④ All Rt. \sphericalangle s \cong .
 ⑤ Common Angle Thm
 ⑥ Given
 ⑦ Given
 ⑧ SAS \cong SAS

8.



Given: $\overline{AB}, \overline{DA} \cong \overline{DE}$, $\sphericalangle ADE \cong \sphericalangle BDC$, $\sphericalangle DAE \cong \sphericalangle DEC$.
 Prove: $\triangle DAB \cong \triangle DEC$.



- ① $\triangle ADE \cong \triangle BDC \rightarrow$ ② $\triangle ADB \cong \triangle CDE$
 ③ $\overline{DA} \cong \overline{DE}$
 ④ $\triangle DAE \cong \triangle DEC$ } \rightarrow ⑤ $\triangle DAB \cong \triangle DEC$

- ① Given
 ② Common Angle Thm
 ③ Given
 ④ Given
 ⑤ ASA \cong ASA