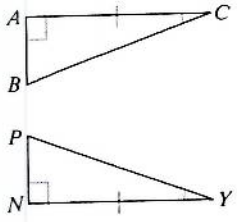
Written Exercises

Decide whether there is a triangle congruent to $\triangle ABC$. If so, write the congruence and name the postulate used. If not, write *no congruence can be deduced.*

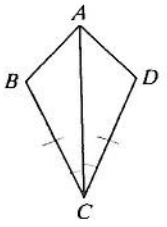
A

1.



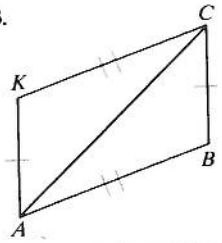
$\triangle ABC \cong \triangle NPY$, ASA

2.



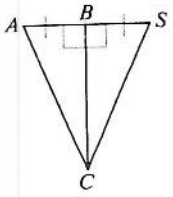
$\triangle ABC \cong \triangle ADC$, SAS

3.



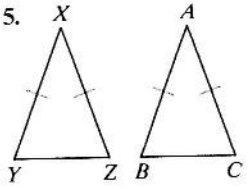
$\triangle ABC \cong \triangle CKA$, SSS

4.



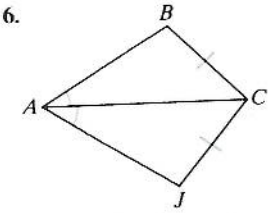
$\triangle ABC \cong \triangle SBC$, SAS

5.



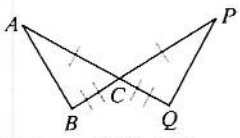
No $\cong$ can be deduced.

6.



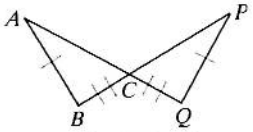
No $\cong$ can be deduced.

7.



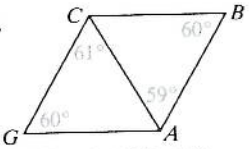
$\triangle ABC \cong \triangle PQC$, SAS

8.



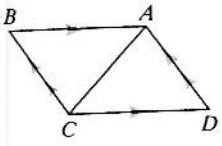
No $\cong$ can be deduced.

9.



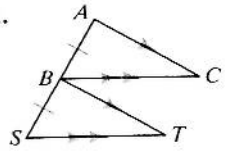
$\triangle ABC \cong \triangle AGC$, ASA

10.



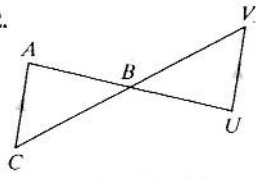
$\triangle ABC \cong \triangle CDA$, ASA

11.



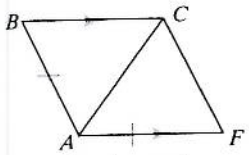
$\triangle ABC \cong \triangle BST$, ASA

12.



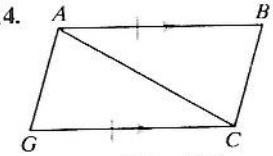
No $\cong$ can be deduced.

13.



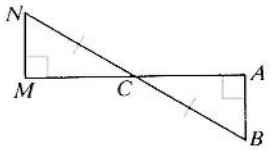
No $\cong$ can be deduced.

14.



$\triangle ABC \cong \triangle CGA$, SAS

15.

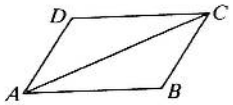


$\triangle ABC \cong \triangle MNC$, ASA

Supply the missing statements and reasons.

16. Given: $\overline{AB} \parallel \overline{DC}$; $\overline{AB} \cong \overline{DC}$

Prove: $\triangle ABC \cong \triangle CDA$

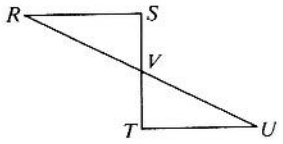


Proof:

Statements	Reasons
1. $\overline{AB} \cong \overline{DC}$	1. ? Given
2. $\overline{AC} \cong \overline{AC}$	2. ? Reflexive Property
3. $\overline{AB} \parallel \overline{DC}$	3. ? Given
4. $\angle BAC \cong \angle DCA$	4. ? If 2 $\parallel$ lines are cut by a trans., then alt. int. $\measuredangle$ are $\cong$.
5. $\triangle ABC \cong \triangle CDA$	5. ? SAS Postulate

17. Given: $\overline{RS} \perp \overline{ST}$; $\overline{TU} \perp \overline{ST}$; V is the midpoint of $\overline{ST}$.

Prove: $\triangle RSV \cong \triangle UTV$

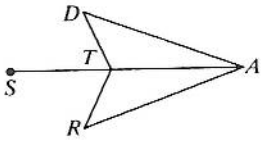


Proof:

Statements	Reasons
1. $\overline{RS} \perp \overline{ST}$; $\overline{TU} \perp \overline{ST}$	1. ? Given
2. $m\angle S = 90 = m\angle$? T	2. Def. of $\perp$ lines and def. of rt. $\angle$
3. V is the midpoint of $\overline{ST}$.	3. ? Given
4. $\overline{SV} \cong$? $\overline{VT}$	4. ? Def. of midpoint
5. $\angle RVS \cong \angle$? UVT	5. ? Vert. $\measuredangle$ are $\cong$.
6. $\triangle$? $\cong \triangle$? RSV, UTV	6. ? ASA Postulate

18. Given: $\overleftrightarrow{SA}$ bisects $\angle DAR$ and $\angle DTR$.

Prove: $\triangle DAT \cong \triangle RAT$



Proof:

Statements	Reasons
1. $\overleftrightarrow{SA}$ bisects $\angle DAR$ and $\angle DTR$. $\angle RAT, \angle DTS, \angle RTS$	1. ? Given
2. $\angle DAT \cong$? ; ? $\cong$?	2. Def. of $\angle$ bisector
3. $\angle DTA$ and $\angle DTS$ are suppl. $\measuredangle$; $\angle$? and $\angle$? are suppl. $\measuredangle$. RTA, RTS	3. Angle Addition Postulate and def. of suppl. $\measuredangle$.
4. $\angle$? $\cong$? DTA, RTA	4. Supplements of $\cong \measuredangle$ are $\cong$.
5. ? $\cong$? $\overline{TA}, \overline{TA}$	5. Reflexive Prop.
6. ? $\triangle DAT \cong \triangle RAT$	6. ? ASA Postulate