

decide whether it is possible to prove the triangles are \cong .
 If possible, state the postulate that makes them \cong . write a
 congruency statement if the triangles are \cong .

①

AAS
 $\Delta FGE \cong \Delta HGT$

②

SSS
 $\Delta WXY \cong \Delta ZXY$

③

given: \overline{BD} bisects $\angle ADC$
 SAS
 $\Delta ADB \cong \Delta CDB$

④

HL
 $\Delta MNQ \cong \Delta QPM$

⑤

NOT \cong

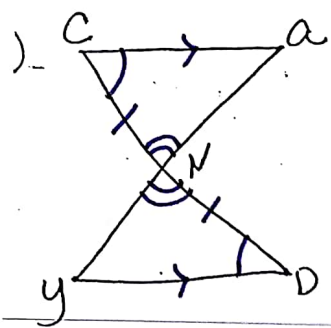
⑥

ASA
 $\Delta NKI \cong \Delta CIK$

⑦

given: $\overline{BA} \cong \overline{SE}$
 $\overline{BA} \parallel \overline{SE}$
 prove: $\Delta ESB \cong \Delta ABS$

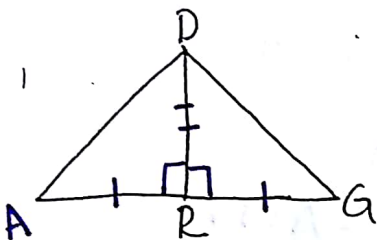
statements	reasons
1) $\overline{BA} \cong \overline{SE}$	1) Given
2) $\overline{BA} \parallel \overline{SE}$	2) Given
3) $\angle ABS \cong \angle ESB$	3) alt. int. \angle s are \cong
4) $\overline{SB} \cong \overline{SB}$	4) reflexive
5) $\Delta ESB \cong \Delta ABS$	5) SAS



iven: $\overline{CA} \parallel \overline{DY}$
 N is midpt of \overline{CD}

rove: $\triangle CAN \cong \triangle DYN$

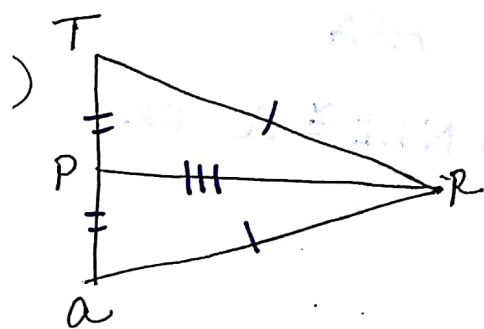
statements	Reason
① $\overline{CA} \parallel \overline{DY}$	① Given
② $\angle C \cong \angle D$	② alt. int. \angle s are \cong
③ N is midpt of \overline{CD}	③ given
④ $\overline{CN} \cong \overline{DN}$	④ def. of midpoint
⑤ $\angle CNA \cong \angle DNY$	⑤ vert. \angle s are \cong
⑥ $\triangle CAN \cong \triangle DYN$	⑥ ASA



iven: $\overline{RA} \cong \overline{RG}$
 $\angle ARD$ and $\angle GRD$
 are right \angle 's

rove: $\triangle ARD \cong \triangle GRD$

statements	Reasons
① $\overline{RA} \cong \overline{RG}$	① Given
② $\angle ARD$ and $\angle GRD$ are right \angle 's	② Given
③ $\angle ARD \cong \angle GRD$	③ all right \angle 's are \cong
④ $\overline{DR} \cong \overline{DR}$	④ reflexive
⑤ $\triangle ARD \cong \triangle GRD$	⑤ SAS



ven: $\overline{TR} \cong \overline{AR}$

~~P is midpt of TA~~
 P is midpt of \overline{TA}

ve: $\triangle TRP \cong \triangle ARP$

statements	Reasons
1) $\overline{TR} \cong \overline{AR}$	1) Given
2) P is midpt of \overline{TA}	2) Given
3) $\overline{TP} \cong \overline{AP}$	3) def. of midpoint
4) $\overline{PR} \cong \overline{PR}$	4) reflexive
5) $\triangle TRP \cong \triangle ARP$	5) SSS

same one postulate or Theorem used to prove the triangles \cong . If none can be used, say none. Write a triangle congruency statement if the triangles are \cong .

11)
SAS
 $\triangle ABD \cong \triangle CBD$

12)
ASA
 $\triangle EFH \cong \triangle GFH$

13)
NOT \cong

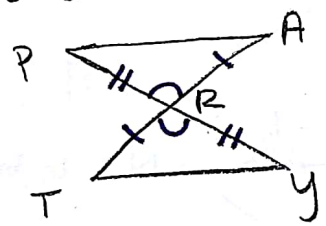
14)
AAS
 $\triangle NOP \cong \triangle RQP$

15)
NOT \cong

16)
ASA
 $\triangle XYW \cong \triangle ZTW$

17) Given: R is the midpt of \overline{AT} & \overline{PY}

Prove: $\angle T \cong \angle A$

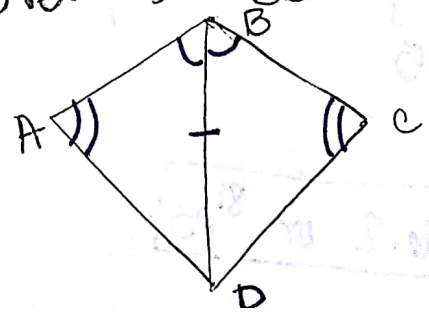


Statements	Reasons
1) R is midpt of \overline{AT} & \overline{PY}	1) Given
2) $\overline{AR} \cong \overline{RT}$	2) def. of midpt
3) $\overline{PR} \cong \overline{RY}$	3) def. of midpt.
4) $\angle PRA \cong \angle YRT$	4) vert. \angle s are \cong
5) $\triangle PRA \cong \triangle YRT$	5) SAS
6) $\angle T \cong \angle A$	6) CPCTC

18) Given: \overline{DB} bisects $\angle ABC$

$\angle A \cong \angle C$

Prove: $\overline{AD} \cong \overline{CD}$



Statements	Reasons
① \overline{DB} bisects $\angle ABC$	① given
② $\angle ABD \cong \angle CBD$	② def. of \angle bisector
③ $\angle A \cong \angle C$	③ given
④ $\overline{BD} \cong \overline{BD}$	④ reflexive
⑤ $\triangle ABD \cong \triangle CBD$	⑤ AAS
⑥ $\overline{AD} \cong \overline{CD}$	⑥ CPCTC

19) What method of Δ congruency only works with right Δ s? HL

20) If $\Delta BAD \cong \Delta TOP$, then $\overline{DB} \cong \overline{PT}$ and $\Delta PTO \cong \Delta DBA$.

21) List the 4 transformations. Which ones produce congruent figures? which one produces similar figures?

translation } congruent figures
 reflection }
 rotation }

dilation - similar figures

Justify the following statements.

22) $\overline{AB} \cong \overline{BA}$ Reflexive

23) If $\angle A \cong \angle B$ & $\angle B \cong \angle C$, then $\angle A \cong \angle C$. Transitive

24) If $x=4$ & $3x=y$, then $3(4)=y$. Substitution

25) If $x=y$, then $x-6=y-6$. Subtraction

26) If $\overline{AB} \cong \overline{CD}$, then $\overline{CD} \cong \overline{AB}$. Symmetric

27) $5(x-6) = 5x-30$ Distributive

Solve for x .

28)

$\Delta ABC \cong \Delta KML$

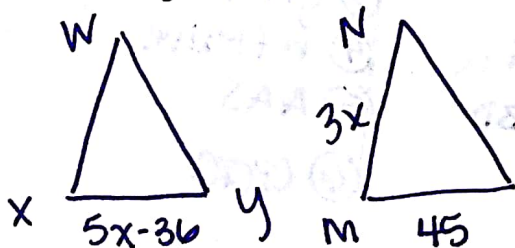
$5x-2 = 48$
 $5x = 50$
 $x = 10$

29)

$\Delta CNZ \cong \Delta BRZ$

$10x-6 = 5$
 $10x = 11$
 $x = 11/10$

30) If $\Delta XYW \cong \Delta MNO$, $MN=3x$, $OM=45$, & $XY=5x-36$.



$5x-36 = 45$

$5x = 81$

$x = 16.2$ or $81/5$