Geometry CP
Ch 4 WS 1 Proving Triangles Congruent

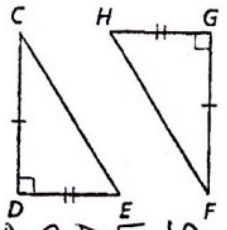
Name: Key
Period:

For # 1-15 determine whether the two triangles are congruent. If so state the congruence statement between the two triangles and then the Triangle Congruence Postulate or Theorem that can be used. If there is not enough information then state "Not enough info".

(1)

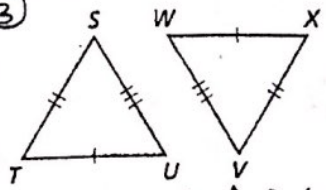
$\Delta TUV \cong \Delta WXY$
ASA

(2)



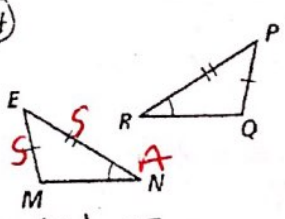
$\Delta CDE \cong \Delta FGH$
SAS

(3)



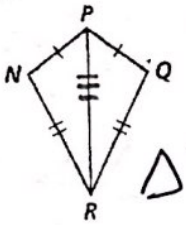
$\Delta STU \cong \Delta VXW$
SSS

(4)



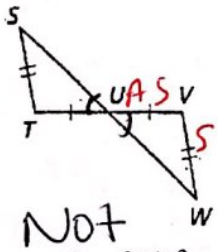
NOT Enough Info

(5)



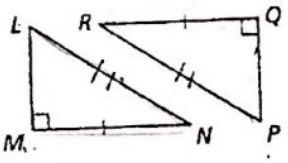
$\Delta PNR \cong \Delta PQR$
SSS

(6)



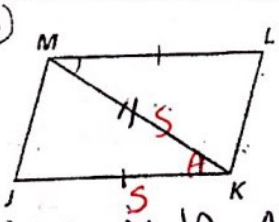
Not enough info

(7)



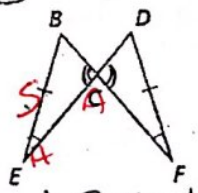
~~Not Enough Info~~
HL

(8)



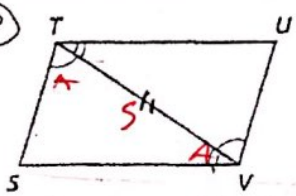
$\Delta MLK \cong \Delta KJM$
SAS

(9)



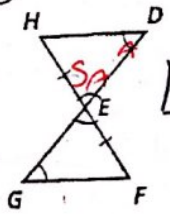
$\Delta BEC \cong \Delta DFC$
SAA

(10)



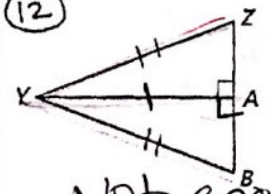
$\Delta TSV \cong \Delta VUT$
ASA

(11)



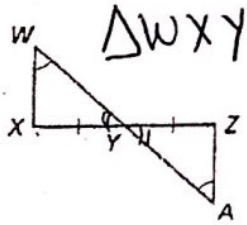
$\Delta DHE \cong \Delta GFE$
SAA

(12)



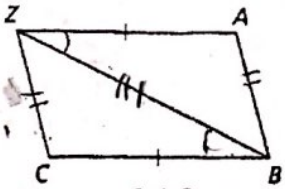
~~Not enough info~~
HL

(13)



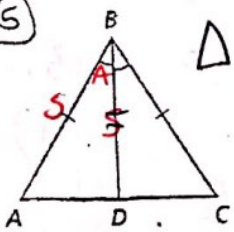
$\Delta WXY \cong \Delta AZY$
SAA

(14)



$\Delta ZCB \cong \Delta BAZ$
CAS or SSS

(15)



$\Delta ABD \cong \Delta CB$
SAS

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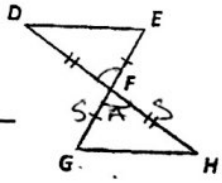
/ /

ASA

Proofs

①

Given: $\overline{EF} \cong \overline{FG}$, $\overline{DF} \cong \overline{FH}$
Prove: $\triangle DFE \cong \triangle HFG$



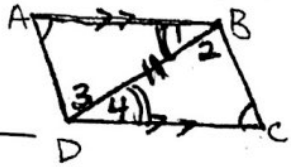
Statements	Reasons
1) (S) $EF \cong FG$	1) given
(S) $DF \cong FH$	
(A) 2) $\angle DFE \cong \angle HFG$	2) Vertical $\angle$s
3) $\triangle DFE \cong \triangle HFG$	SAS

②

Given: $\angle Q \cong \angle S$, $\angle TRS \cong \angle RTQ$
Prove: $\triangle QRT \cong \triangle STR$

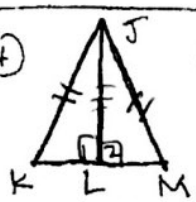
Statements	Reasons
(A) $\angle Q \cong \angle S$	1) given
(A) $TRS \cong \angle RTQ$	
(S) $\overline{RT} \cong \overline{RT}$	2) Reflexive
3) $\triangle QRT \cong \triangle STR$	3) SAA

③ Given: $\angle A \cong \angle C$, $\overline{AB} \parallel \overline{DC}$
Prove: $\triangle ABD \cong \triangle CDB$



Statements	Reasons
(A) 1) $\angle A \cong \angle C$, $\overline{AB} \parallel DC$	1) given
(A) 2) $\angle 1 \cong \angle 4$	2) Alternate Interior $\angle$s
(S) 3) $\overline{DB} \cong \overline{DB}$	3) Reflexive
4) $\triangle ABD \cong \triangle CDB$	4) SAA

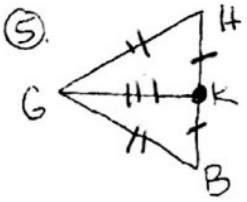
④



Given: $\overline{JL} \perp \overline{KM}$
$\overline{JK} \cong \overline{JM}$
Prove: $\triangle JKL \cong \triangle JML$

Statements	Reasons
1) $JL \perp KM$	1) given
(S) $\overline{JK} \cong \overline{JM}$	
(A) 2) $\angle 1$ and $\angle 2$ are right $\angle$s	2) def of $\perp$
(S) 3) $\overline{JL} \cong \overline{JL}$	3) Reflexive
4) $\triangle JKL \cong \triangle JML$	4) HL

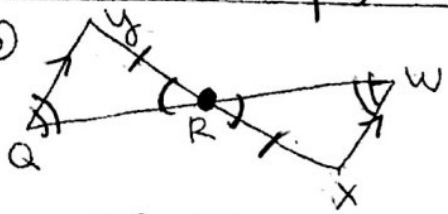
⑤



Given: K is the midpt. of $\overline{HB}$
$\overline{GH} \cong \overline{GB}$
Prove: $\triangle GKH \cong \triangle GKB$

S	R
1) K is midpt of $\overline{HB}$	1) given
(S) $\overline{GH} \cong \overline{GB}$	
(S) 2) $\overline{HK} \cong \overline{KB}$	2) Def of midpoint
(S) 3) $\overline{GK} \cong \overline{GK}$	3) Reflexive
4) $\triangle GKH \cong \triangle GKB$	4) SSS

⑥



Given: $\overline{QY} \parallel \overline{XW}$
$\overline{QR}$ bisects $\overline{YX}$
Prove: $\triangle XWR \cong \triangle YQR$

S	R
1) $\overline{QY} \parallel \overline{XW}$, $\overline{QR}$ bisects $\overline{YX}$	1) given
(S) 2) $\overline{YR} \cong \overline{RX}$	2) Def of bisect
(A) 3) $\angle YRQ \cong \angle WRX$	3) Vertical $\angle$s
(A) 4) $\angle Q \cong \angle W$	4) Alternate Interior $\angle$s
5) $\triangle XWR \cong YQR$	5) AAS

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