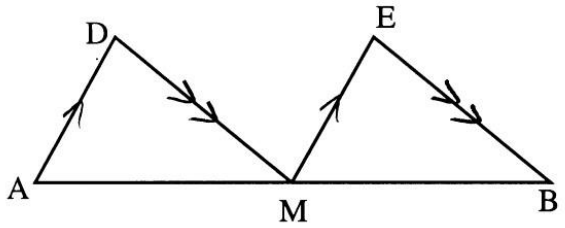
Name_____ **Date**_____

Mr. Doroquez

Revenge of the Proofs

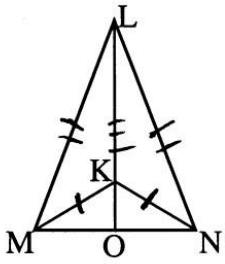
Write two-column proofs for the following. Make sure to number each step.

1) Given: $\overline{AD} \parallel \overline{ME}$; $\overline{MD} \parallel \overline{BE}$
M is the midpoint of $\overline{AB}$
Prove: $\overline{MD} \cong \overline{BE}$



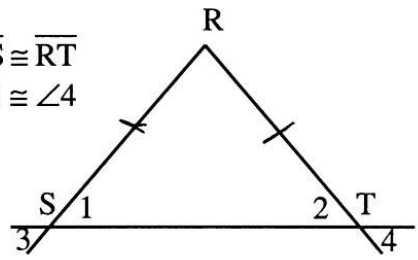
① $\overline{AD} \parallel \overline{ME}$	GIVEN
② $\overline{MD} \parallel \overline{BE}$	GIVEN
③ M is the mid.	GIVEN
④ $\angle DAM \cong \angle EMB$	CA
⑤ $\angle DMA \cong \angle EBM$	CA
⑥ $\overline{AM} \cong \overline{MB}$	Def of mid.
⑦ $\triangle ADM \cong \triangle MEB$	ASA
⑧ $\overline{MD} \cong \overline{BE}$	CPCTC

2) Given: $\overline{LM} \cong \overline{LN}$; $\overline{KM} \cong \overline{KN}$
$\overline{KO}$ bisects $\angle MKN$
Prove: $\overline{LO}$ bisects $\angle MLN$



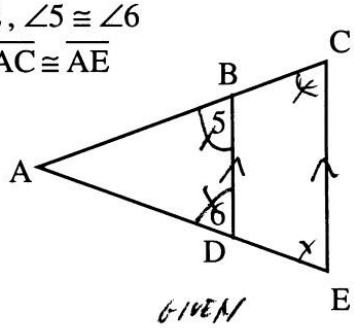
① $\overline{LM} \cong \overline{LN}$	GIVEN
② $\overline{KM} \cong \overline{KN}$	GIVEN
③ $\overline{KO}$ bis. $\angle MKN$	GIVEN
④ $\overline{LK} \cong \overline{LK}$	REF
⑤ $\triangle MLK \cong \triangle NLK$	SSS
⑥ $\angle MLK \cong \angle NLK$	CPCTC
⑦ $\overline{LO}$ bis $\angle MLN$	Def. of $\angle$ Bisector

3) Given: $\overline{RS} \cong \overline{RT}$
Prove: $\angle 3 \cong \angle 4$



① $\overline{RS} \cong \overline{RT}$	GIVEN
② $\angle 1 \cong \angle 2$	Base Angles Theorem
③ $\angle 1 \cong \angle 3$	Vert. $\angle$s
④ $\angle 2 \cong \angle 4$	Vert $\angle$s
⑤ $\angle 3 \cong \angle 4$	Substitution

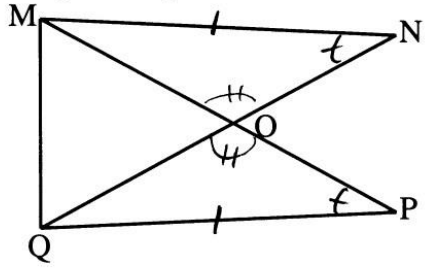
4) Given: $\overline{BD} \parallel \overline{CE}$, $\angle 5 \cong \angle 6$
Prove: $\overline{AC} \cong \overline{AE}$



① $\overline{BD} \parallel \overline{CE}$	GIVEN
② $\angle 5 \cong \angle 6$	GIVEN
③ $\angle 5 \cong \angle ACE$	CA
④ $\angle 6 \cong \angle AEC$	CA
⑤ $\angle ACE \cong \angle AEC$	Substitution
⑥ $\overline{AC} \cong \overline{AE}$	Converse Base Angles Th

5) Given: $\overline{MN} \cong \overline{QP}$, $\angle N \cong \angle P$

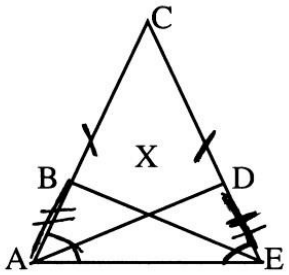
Prove: $\angle OMQ \cong \angle OQM$



1	$\overline{MN} \cong \overline{QP}$	GIVEN
2	$\angle N \cong \angle P$	GIVEN
3	$\angle MON \cong \angle QOP$	V.A.
4	$\triangle MON \cong \triangle QOP$	AAS
5	$\overline{MO} \cong \overline{QO}$	CPCTC
6	$\angle OMQ \cong \angle OQM$	Base Angles Theorem

7) Given: $\overline{CA} \cong \overline{CE}$, $\overline{BA} \cong \overline{DE}$

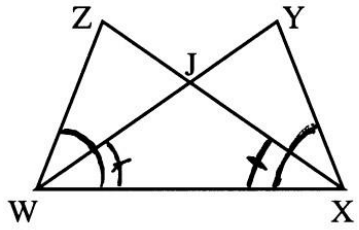
Prove: $\angle ABE \cong \angle EDA$



1	$\overline{CA} \cong \overline{CE}$	GIVEN
2	$\overline{BA} \cong \overline{DE}$	GIVEN
3	$\angle BAE \cong \angle DEA$	Base Angles Theorem
4	$\overline{AE} \cong \overline{AE}$	Ref
5	$\triangle BAE \cong \triangle DEA$	SAS
6	$\angle ABE \cong \angle EDA$	CPCTC

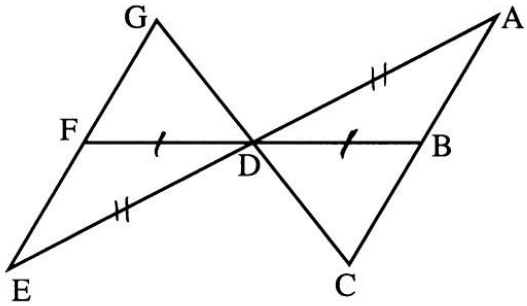
6) Given: $\angle ZWX \cong \angle YXW$, $\angle ZXW \cong \angle YWX$

Prove: $\angle Z \cong \angle Y$



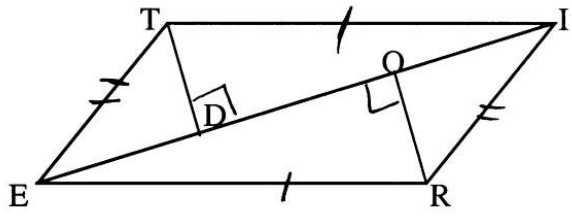
1	$\angle ZWX \cong \angle YXW$	GIVEN
2	$\angle ZXW \cong \angle YWX$	GIVEN
3	$\overline{WX} \cong \overline{WX}$	REF
4	$\triangle ZWX \cong \triangle YXW$	ASA
5	$\angle Z \cong \angle Y$	CPCTC

8) Given: $\overline{AD} \cong \overline{ED}$, D is the midpoint of $\overline{BF}$
Prove: $\Delta ADC \cong \Delta EDG$



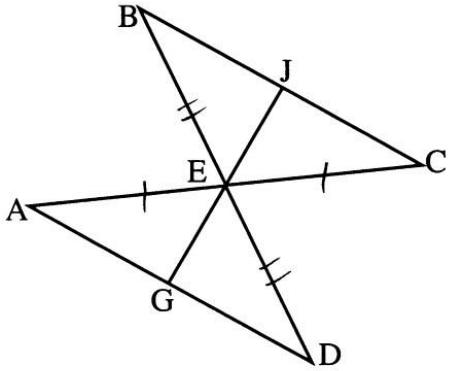
(1)	$\overline{AD} \cong \overline{ED}$	GIVEN
(2)	D is midpt of $\overline{BF}$	GIVEN
(3)	$\overline{FD} \cong \overline{BD}$	Def. of midpt.
(4)	$\angle FDE \cong \angle BDA$	Vert. Ang.
(5)	$\Delta FDE \cong \Delta BDA$	SAS
(6)	$\angle E \cong \angle A$	CPCTC
(7)	$\angle GDE \cong \angle CDA$	Vert. Ang
(8)	$\Delta ADC \cong \Delta EDG$	ASA

9) Given: $\overline{ER} \cong \overline{IT}$, $\overline{ET} \cong \overline{IR}$, $\angle TDI$ & $\angle ROE$ are right angles.
Prove: $\overline{TD} \cong \overline{RO}$



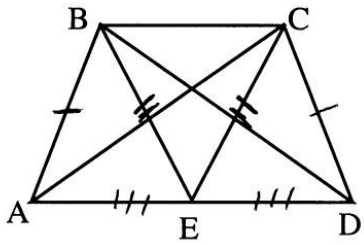
(1)	$\overline{ER} \cong \overline{IT}$	GIVEN
(2)	$\overline{ET} \cong \overline{IR}$	GIVEN
(3)	$\angle TDI + \angle ROE$ Rt angles	GIVEN
(4)	$\angle TDE + \angle ROI$ Rt angles	supplementary angles
(5)	$\angle TDE \cong \angle ROI$	Rt angles are $\cong$
(6)	$\overline{EI} \cong \overline{EI}$	Ref.
(7)	$\Delta ETI \cong \Delta IRE$	SSS
(8)	$\angle TED \cong \angle RIO$	CPCTC
(9)	$\Delta TED \cong \Delta RIO$	SAS
(10)	$\overline{TD} \cong \overline{RO}$	CPCTC

10) Given: E is the midpoint of $\overline{AC}$ and $\overline{DB}$
Prove: $\Delta GED \cong \Delta JEB$



① E is midpt of $\overline{AC}$ and $\overline{DB}$	GIVEN
② $\overline{AE} \cong \overline{CE}$	Def of Midpt
③ $\overline{BE} \cong \overline{DE}$	Def of Midpt
④ $\angle BEC \cong \angle DEA$	Vert. $\angle$s
⑤ $\Delta BEC \cong \Delta DEA$	SAS
⑥ $\angle GDE \cong \angle JBE$	CPCTC
⑦ $\angle BEJ \cong \angle DEG$	Vert. $\angle$s
⑧ $\Delta GED \cong \Delta JEB$	ASA

11) Given: $\overline{AB} \cong \overline{DC}$, E is the midpoint of $\overline{AD}$, $\overline{CE} \cong \overline{BE}$
Prove: $\overline{AC} \cong \overline{DB}$



① $\overline{AB} \cong \overline{DC}$	GIVEN
② E is midpt of $\overline{AD}$	GIVEN
③ $\overline{CE} \cong \overline{BE}$	GIVEN
④ $\overline{AE} \cong \overline{DE}$	Def. of midpt
⑤ $\Delta BAE \cong \Delta CDE$	SSS
⑥ $\angle BAE \cong \angle CDE$	CPCTC
⑦ $\overline{AD} \cong \overline{AD}$	Ref.
⑧ $\Delta ABD \cong \Delta DCA$	SAS
① $\overline{AC} \cong \overline{DB}$	CPCTC