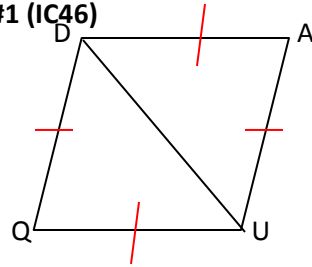


Geometry (G.CO.11)

Unit One B: Special Parallelogram Proofs #1 (IC46)

1. Given: $\triangle QUD \cong \triangle ADU$;
 $\overline{AD} \cong \overline{AU}$
 Prove: QUAD is a rhombus

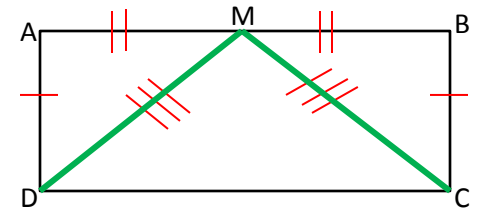


Statements	Reasons
1) $\triangle QUD \cong \triangle ADU$	1) Given
2) $\overline{AD} \cong \overline{AU}$	2) Given
3) $\overline{QU} \cong \overline{AD}$	3) CPCTC
4) $\overline{DQ} \cong \overline{UA}$	4) CPCTC
5) $\overline{AD} \cong \overline{AU} \cong \overline{QU} \cong \overline{QD}$	5) Trans Prop (2,3,4)
6) QUAD is a rhombus	6) def of rhombus

Name: _____

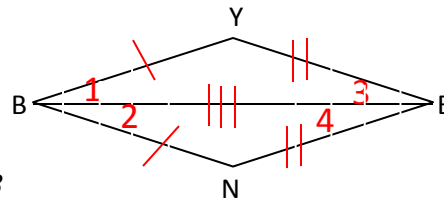
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2. Given: ABCD is a rectangle;
 M is the midpoint of \overline{AB} .
 Prove: $\triangle DMC$ is isosceles with
 base \overline{DC}



Statements	Reasons
1) M is midpt of \overline{AB}	1) Given
2) $\overline{AM} \cong \overline{BM}$	2) def of midpoint
3) ABCD is rectangle	3) Given
4) $\overline{AD} \cong \overline{BC}$	4) Rect \rightarrow opp sides \cong
5) $\angle A$ & $\angle B$ are rt \angle s	5) Rect \rightarrow all right \angle s
6) $\angle A \cong \angle B$	6) All rt. \angle s \cong
7) $\triangle DAM \cong \triangle CBM$	7) SAS
8) $\overline{DM} \cong \overline{CM}$	8) CPCTC
9) $\triangle DMC$ is isosc w/base \overline{DC}	9) def of isosc \triangle

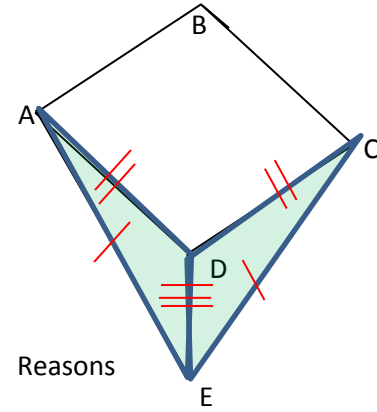
3. Given: $\overline{BY} \cong \overline{BN}$; $\overline{YE} \cong \overline{NE}$



Prove: \overline{BE} bisects $\angle E$; \overline{BE} bisects $\angle B$

Statements	Reasons
1) $\overline{BY} \cong \overline{BN}$	1) Given
2) $\overline{YE} \cong \overline{NE}$	2) Given
3) $\overline{BE} \cong \overline{BE}$	3) Reflexive
4) $\triangle BYE \cong \triangle BNE$	4) SSS
5) $\angle 1 \cong \angle 2$	5) CPCTC
6) \overline{BE} bisects $\angle B$	6) def of \angle bisector
7) $\angle 3 \cong \angle 4$	7) CPCTC
8) \overline{BE} bisects $\angle E$	8) def of \angle bisector

4. Given: ABCD is a rhombus; $\overline{AE} \cong \overline{CE}$



Prove: $\angle ADE \cong \angle CDE$

Statements	Reasons
1) $\overline{AE} \cong \overline{CE}$	1) Given
2) ABCD is rhombus	2) Given
3) $\overline{AD} \cong \overline{DC}$	3) Rhombus \rightarrow all sides \cong
4) $\overline{DE} \cong \overline{DE}$	4) Reflexive Prop
5) $\triangle ADE \cong \triangle CDE$	5) SSS
6) $\angle ADE \cong \angle CDE$	6) CPCTC