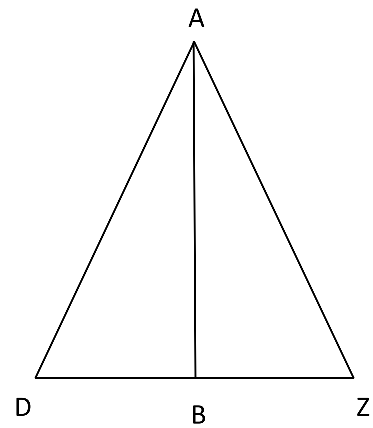
Triangle Proof Practice

1. **Given:** $\overline{AB} \perp \overline{DZ}$, $\overline{AD} \cong \overline{AZ}$

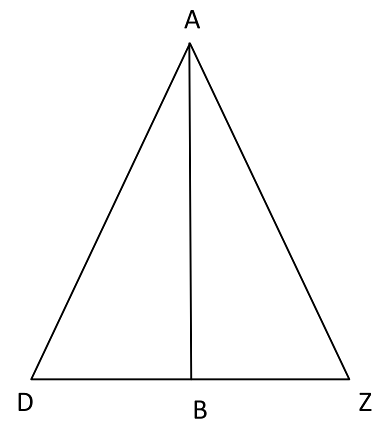
   Prove: $\triangle ZAB \cong \triangle DAB$



Statements	Reasons
$\overline{AB} \perp \overline{DZ}$	Given
$\angle ABD$ and $\angle ABZ$ are right $\angle s$	Definition of $\perp$ lines
$\angle ABD \cong \angle ABZ$	Right $\angle$ $\cong$ Theorem
$\overline{AD} \cong \overline{AZ}$	Given
$\overline{AB} \cong \overline{AB}$	Reflexive property
$\triangle ZAB \cong \triangle DAB$	HL

2. **Given:** $\overline{AB}$ bisects $\angle DAZ$, $\overline{AD} \cong \overline{AZ}$

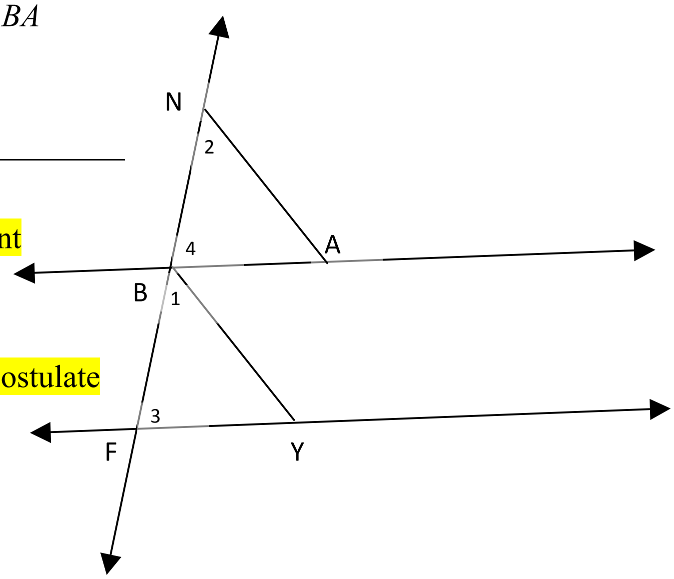
   Prove: $\overline{ZB} \cong \overline{DB}$



Statements	Reasons
$\overline{AB}$ bisects $\angle DAZ$	Given
$\angle DAB \cong \angle ZAB$	Definition of bisect
$\overline{AD} \cong \overline{AZ}$	Given
$\overline{AB} \cong \overline{AB}$	Reflexive property
$\triangle ZAB \cong \triangle DAB$	SAS
$\overline{ZB} \cong \overline{DB}$	CPCTC

3. **Given:** B is the midpoint of $\overline{NF}$, $\angle 1 \cong \angle 2$, $\overleftrightarrow{FY} \parallel \overleftrightarrow{BA}$

   Prove: $\triangle NAB \cong \triangle BYF$



Statements	Reasons
B is the midpoint of $\overline{NF}$	Given
$\overline{NB} \cong \overline{FB}$	Definition of midpoint
$\angle 1 \cong \angle 2$	Given
$\overleftrightarrow{FY} \parallel \overleftrightarrow{BA}$	Given
$\angle 3 \cong \angle 4$	Corresponding $\angle s$ Postulate
$\triangle NAB \cong \triangle BYF$	ASA

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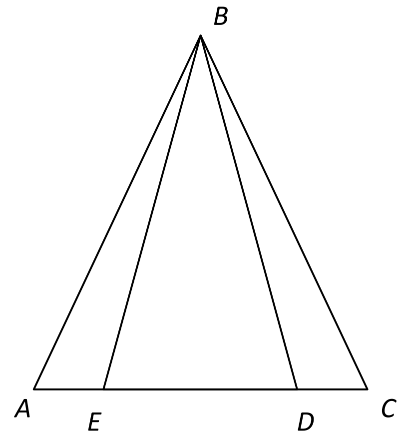
4. **Given:** $\triangle ABC$ is isosceles, $\overline{AE} \cong \overline{CD}$

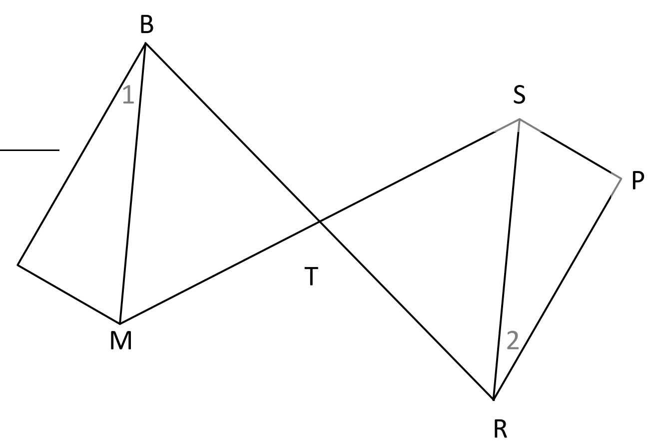
   Prove: $\triangle BED$ is isosceles



Statements	Reasons
$\triangle ABC$ is isosceles	Given
$\overline{AB} \cong \overline{CB}$	Definition of isosceles $\triangle$
$\angle A \cong \angle C$	Isosceles $\triangle$ Theorem
$\overline{AE} \cong \overline{CD}$	Given
$\triangle ABE \cong \triangle CBD$	ASA
$\overline{BE} \cong \overline{BD}$	CPCTC
$\triangle BED$ is isosceles	Definition of isosceles $\triangle$

5. **Given:** $\angle 1 \cong \angle 2$, $\overleftrightarrow{BM} \parallel \overleftrightarrow{SR}$, T is the midpoint of $\overline{SM}$, $\angle A$ and $\angle P$ are right angles

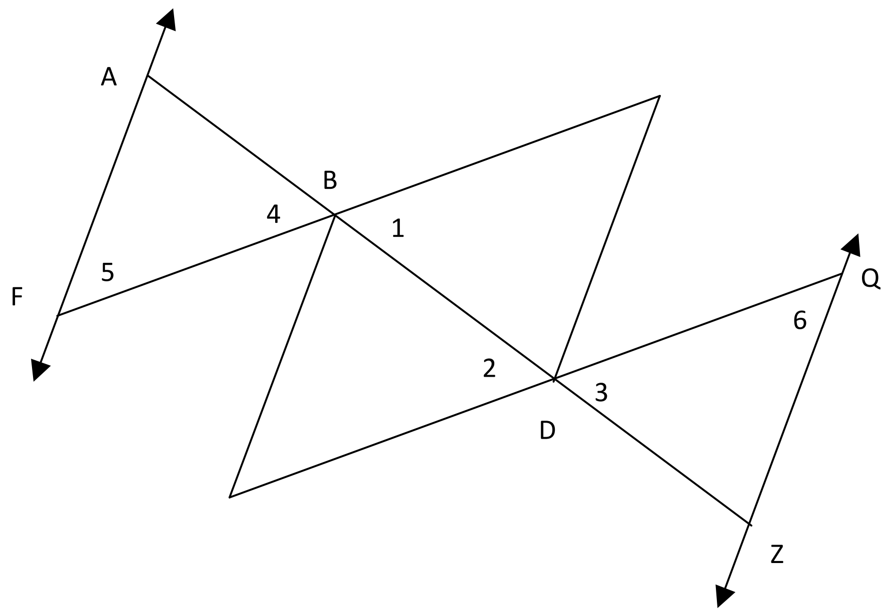
   Prove: $\triangle ABM \cong \triangle PRS$



Statements	Reasons
$\overleftrightarrow{BM} \parallel \overleftrightarrow{SR}$	Given
$\angle MBT \cong \angle SRT$	Alt. Int. $\angle s$ Theorem
T is the midpoint of $\overline{SM}$	Given
$\overline{MT} \cong \overline{ST}$	Definition of midpoint
$\angle BTM \cong \angle RTS$	Vertical $\angle s$ Theorem
$\triangle BTM \cong \triangle RTS$	AAS
$\overline{BM} \cong \overline{RS}$	CPCTC
$\angle 1 \cong \angle 2$	Given
$\angle A$ and $\angle P$ are right angles	Given
$\angle A \cong \angle P$	Right $\angle$ $\cong$ Theorem
$\triangle ABM \cong \triangle PRS$	AAS

Triangle Proof Practice

6. **Given:** $\angle 1 \cong \angle 2$, $\overline{AB} \cong \overline{BD} \cong \overline{DZ}$, $\angle 5 \cong \angle 6$
   Prove: $\overleftrightarrow{AF} \parallel \overleftrightarrow{QZ}$



Statements	Reasons
$\angle 1 \cong \angle 2$	Given
$\angle 1 \cong \angle 4$, $\angle 2 \cong \angle 3$	Vertical $\angle s$ Theorem
$\angle 3 \cong \angle 4$	Transitive property
$\angle 5 \cong \angle 6$	Given
$\overline{AB} \cong \overline{BD} \cong \overline{DZ}$	Given
$\triangle ABF \cong \triangle ZDQ$	AAS
$\angle A \cong \angle Z$	CPCTC
$\overleftrightarrow{AF} \parallel \overleftrightarrow{QZ}$	Alt. Int. $\angle s$ Converse Theorem