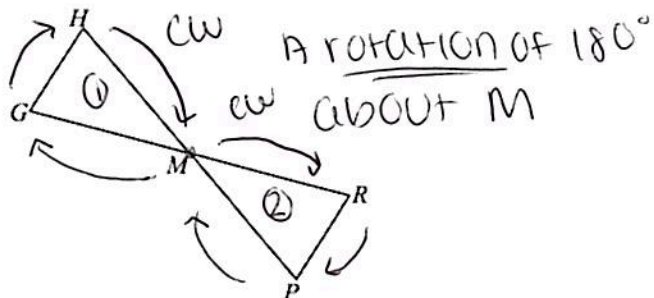


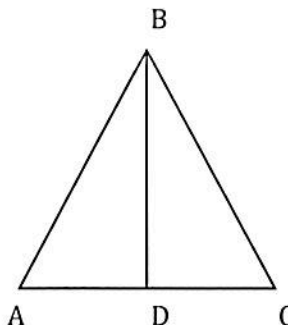
AIM: HOW DO WE COMPLETE PROOFS USING THE SAS AND AAS POSTUALTES?

Do Now:

1. Describe the rigid motion that would map $\triangle GHM$ onto $\triangle RPM$.



2. Describe the rigid motion that would map $\triangle ABD$ onto $\triangle CBD$.



A REFLECTION OVER LINE \overline{BD}

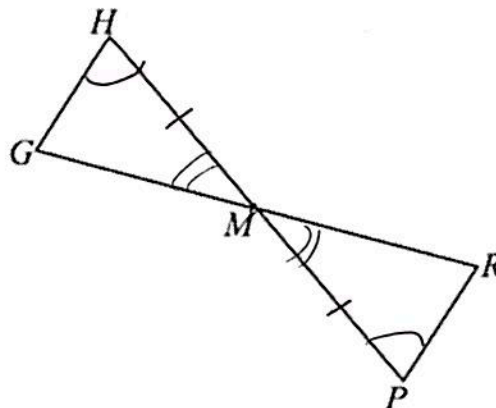
****RECALL****

- To use ASA, the side must be included between the angles.
- To use AAS, the side must NOT be included between the angles.

1. Given: M is the midpoint of \overline{HP} , $\angle H \cong \angle P$
 Prove: $\triangle GHM \cong \triangle RPM$

PLAN:

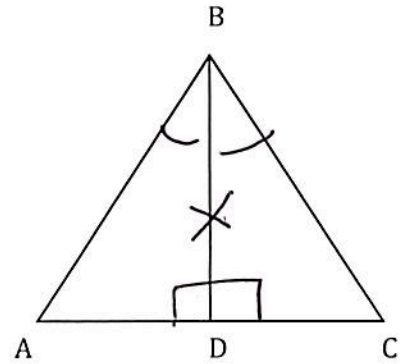
- (A) $\angle H \cong \angle P$ ✓
- (S) $\overline{HM} \cong \overline{MP}$ ✓
- (A) $\angle HMG \cong \angle PMR$ ✓



STATEMENT	REASON
1. M is the midpoint of \overline{HP} $\angle H \cong \angle P$ ✓	1. Given
2. $\overline{HM} \cong \overline{MP}$ ✓	2. A midpoint creates 2 \cong segments
3. $\angle HMG \cong \angle PMR$ ✓	3. Vertical angles are congruent.
4. $\triangle GHM \cong \triangle RPM$	4. ASA \cong ASA

2. Given: \overline{BD} bisects $\angle ABC$, $\overline{BD} \perp \overline{AC}$
 Prove: $\triangle ABD \cong \triangle CBD$

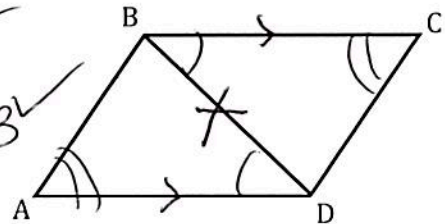
PLAN: (A) $\angle ABD \cong \angle CBD$ ✓
 (S) $\overline{BD} \cong \overline{BD}$ ✓
 (A) $\angle ADB \cong \angle CDB$ ✓



STATEMENT	REASON
1. \overline{BD} bisects $\angle ABC$ $\overline{BD} \perp \overline{AC}$	1. Given
2. $\angle ABD \cong \angle CBD$ ✓	2. A <u>bisector</u> creates two congruent angles.
3. $\overline{BD} \cong \overline{BD}$ ✓	3. Reflexive property
4. $\angle ADB \cong \angle CDB$ ✓	4. <u>Perpendicular</u> lines form <u>\cong</u> right angles.
5. $\triangle ABD \cong \triangle CBD$	5. ASA \cong ASA

4. Given: $\overline{BC} \parallel \overline{AD}$ and $\angle A \cong \angle C$
 Prove: $\triangle ABD \cong \triangle CDB$

(A) $\angle A \cong \angle C$ ✓
 (A) $\angle CBD \cong \angle ADB$ ✓
 (S) $\overline{BD} \cong \overline{BD}$ ✓

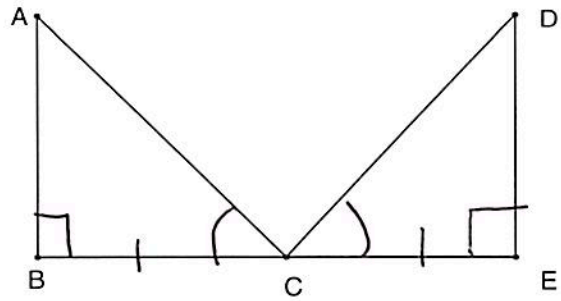


STATEMENT	REASON
1. $\overline{BC} \parallel \overline{AD}$ and $\angle A \cong \angle C$ ✓	1. Given
2. $\angle CBD \cong \angle ADB$	2. <u>alternate int. \angle's</u> are congruent.
3. $\overline{BD} \cong \overline{BD}$	3. <u>Reflexive</u> Property
4. $\triangle ABD \cong \triangle CDB$	4. AAS \cong AAS

HOMEWORK

1. Given: $\angle ACB \cong \angle DCE$
 $\overline{AB} \perp \overline{BE}, \overline{DE} \perp \overline{BE}$
 C is the midpoint of \overline{BE}

ASA

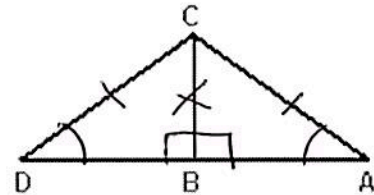


Prove: $\triangle ABC \cong \triangle DEC$

STATEMENT	REASON
1. $\triangle ACB \cong \triangle DCE$ $\overline{AB} \perp \overline{BE}, \overline{DE} \perp \overline{BE}$ C is the midpoint of \overline{BE}	1. Given
2. $\overline{BC} \cong \overline{CE}$	2. A <u>midpoint</u> creates two congruent segments.
3. $\angle ABC \cong \angle DEC$	3. <u>\perp</u> lines form <u>\cong</u> right angles.
4. $\triangle ABC \cong \triangle DEC$	4. <u>ASA \cong ASA</u>

2. Given: $\overline{CB} \perp \overline{DA}$
 $\triangle DCA$ is isosceles with base \overline{DA}

AAS



Prove: $\triangle CDB \cong \triangle CAB$

STATEMENT	REASON
1. $\overline{CB} \perp \overline{DA}$ $\triangle DCA$ is isosceles	1. Given
2. $\angle CBD \cong \angle CBA$	2. <u>\perp</u> lines form <u>\cong</u> right angles.
3. $\angle D \cong \angle A$	3. <u>Isosceles</u> triangles have <u>\cong</u> base angles.
4. $\overline{CB} \cong \overline{CB}$	4. <u>Reflexive</u> Property.
5. $\triangle CBD \cong \triangle CAB$	5. <u>AAS \cong AAS</u>

