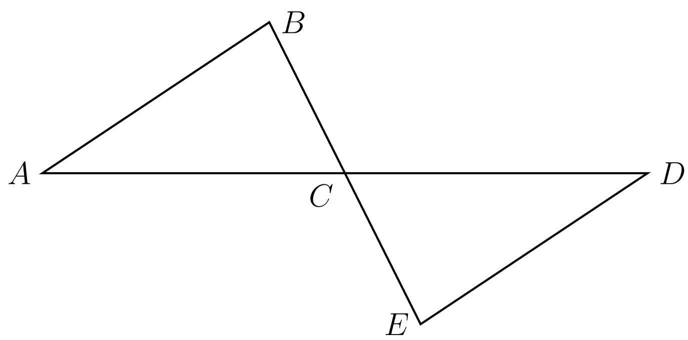
Learning Trajectories Name:
2022-2023

Proof Trajectory

1. Given $\triangle ABC$ and $\triangle DEC$ with $\angle B \cong \angle E$. C is the midpoint of $\overline{BE}$.
   Prove $\triangle ABC \cong \triangle DEC$.

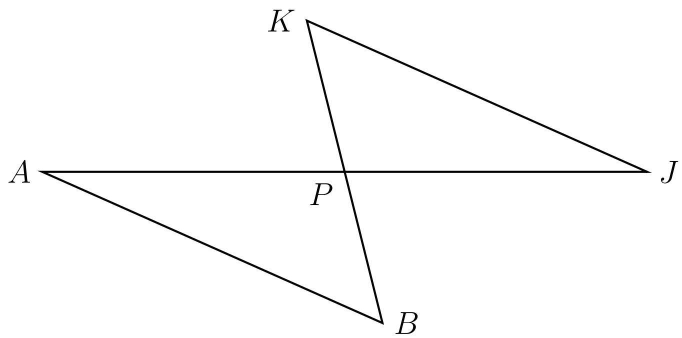


Statement	Reason
1) __________	1) Given
2) __________	2) Given
3) __________	3) Given
4) $\angle BCA \cong \angle ECD$	4) __________
5) __________	5) Definition of a midpoint
6) $\triangle ABC \cong \triangle DEC$	6) __________

List of theorem/situations for $\triangle \cong$ proofs

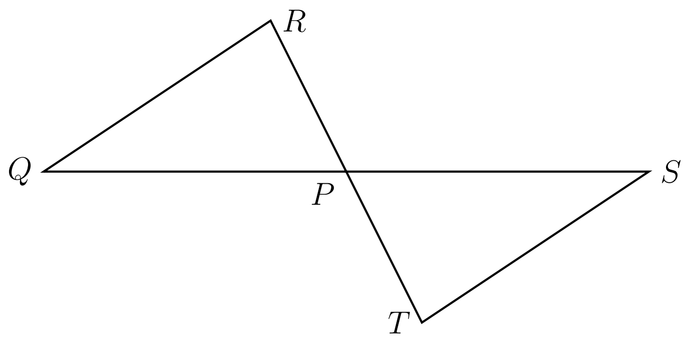
- Vertical angles w segment bisectors
- Transversal corresponding
- Transversal with shared side on transversal
- Two inscribed in circle with vertical angles
- Inscribed in circle triangle with external angle, showing arc measure relationship
- Rotate triangle

2. Given $\triangle ABP$ and $\triangle JKP$ with $\angle B \cong \angle K$. P bisects $\overline{AJ}$. Prove $\triangle ABP \cong \triangle JKP$.



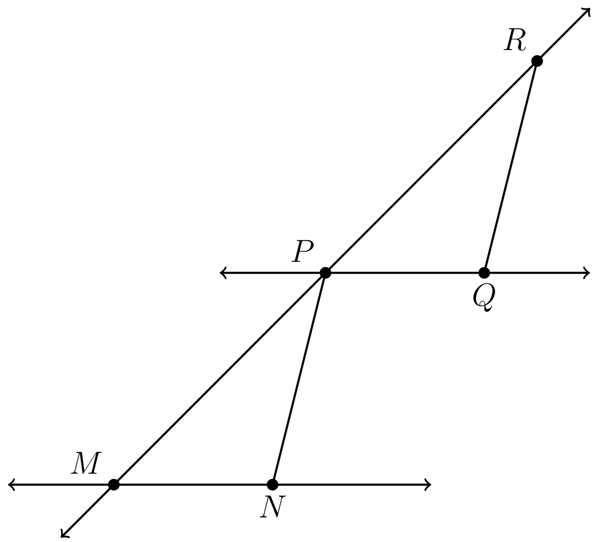
Statement	Reason
1) $\triangle ABP$, $\triangle JKP$	1) Given
2) ________________	2) Given
3) ________________	3) Given
4) $\angle APB \cong \angle JPK$	4) ________________
5) ________________	5) Definition of a bisector
6) $\triangle ABP \cong \triangle JKP$	6) ________________

3. Given $\triangle QRP$ and $\triangle STP$ with $\overline{QP} \cong \overline{SP}$. P is the midpoint $\overline{RT}$.
Prove $\triangle QRP \cong \triangle STP$.



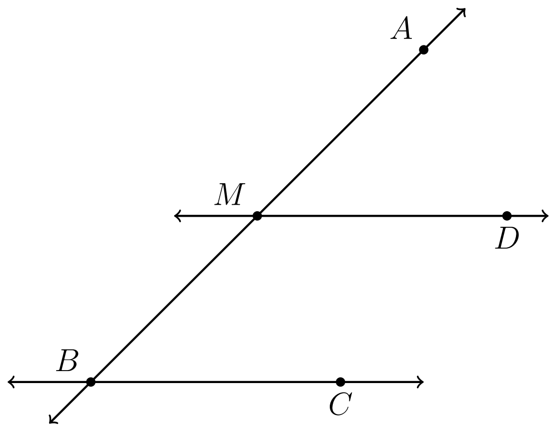
Statement	Reason
1) $\triangle QRP$, $\triangle STP$	1) Given
2) ____________	2) Given
3) ____________	3) Given
4) $\angle QPR \cong \angle SPT$	4) ____________
5) ____________	5) Definition of a midpoint
6) $\triangle QRP \cong \triangle STP$	6) ____________

4. The transversal $\overleftrightarrow{MPR}$ intersects two parallel lines, $\overleftrightarrow{PQ} || \overleftrightarrow{MN}$. Given $\angle PRQ \cong \angle MPN$ and P bisects $\overline{MR}$.
Prove $\triangle MPN \cong \triangle PRQ$.



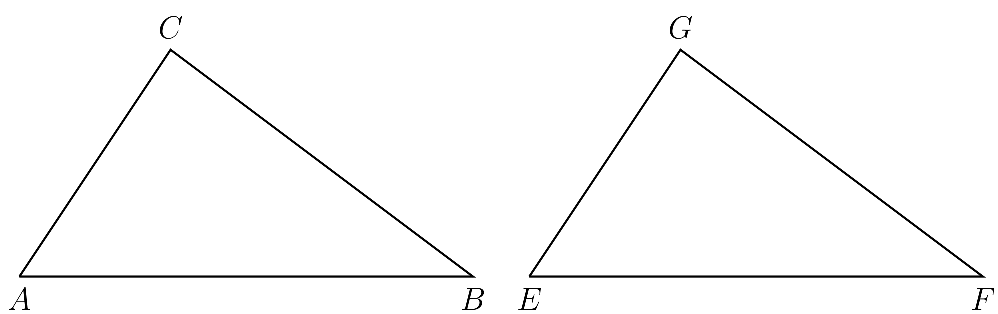
Statement	Reason
1) ________________	1) Given
2) ________________	2) Given
3) ________________	3) Given
4) $\angle RPQ \cong \angle PMN$	4) ________________
5) ________________	5) Definition of a bisector
6) $\triangle MPN \cong \triangle PRQ$	6) ________________

5. Given two parallel lines are intersected by a transversal, $\overleftrightarrow{MD} || \overleftrightarrow{BC}$. $m\angle AMD = 4x + 5$ and $m\angle MBC = 5x - 7$. Find $m\angle AMD$.



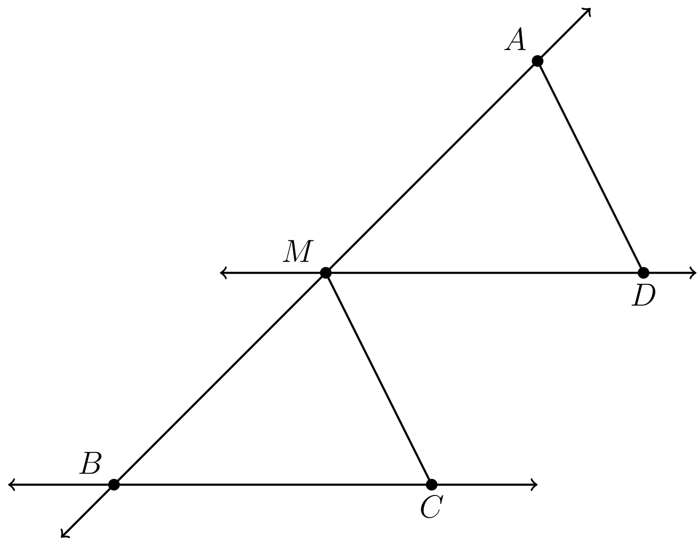
6. In the diagram above, the point M bisects $\overline{AB}$. If $AM = 4$ find AB.

7. Given $\triangle ABC$ and $\triangle EFG$ with $\overline{AB} \cong \overline{EF}$, $\overline{BC} \cong \overline{FG}$, and $\overline{AC} \cong \overline{EG}$.
Prove $\triangle ABC \cong \triangle EFG$ (by filling in the blanks below)



Statement	Reason
1) $\triangle ABC$, $\triangle EFG$	1) Given
2) $\overline{AB} \cong \overline{EF}$	2) ____________________
3) $\overline{BC} \cong \overline{FG}$, $\overline{AC} \cong \overline{EG}$	3) ____________________
4) $\triangle ABC \cong \triangle EFG$	4) ____________________

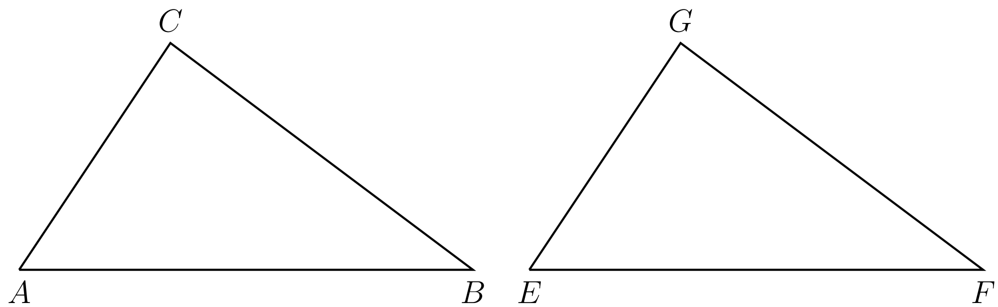
8. Given two parallel lines intersect a transversal, $\overleftrightarrow{MD} || \overleftrightarrow{BC}$. Given $\overline{MD} \cong \overline{BC}$ and M is the midpoint of $\overline{AB}$.
Prove $\triangle ADM \cong \triangle MCB$.



Statement	Reason

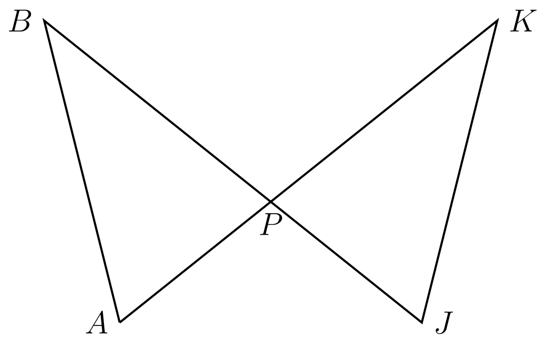
Statement	Reason
1) $\overleftrightarrow{MD} \| \overleftrightarrow{BC}$	1) __________
2) M is the midpoint of $\overline{AB}$	2) __________
3) ________ $\cong \overline{BC}$	3) Given
4) $\angle AMD \cong \angle MBC$	4) __________
5) ________ $\cong \overline{AM}$	5) Definition of a midpoint
6) $\triangle ADM \cong \triangle MCB$	6) __________

9. Given $\triangle ABC$ and $\triangle EFG$ with $\angle A \cong \angle E$, $\overline{AB} \cong \overline{EF}$, and $\overline{AC} \cong \overline{EG}$. Prove $\triangle ABC \cong \triangle EFG$.



Statement	Reason
1) $\triangle ABC$, $\triangle EFG$	1) Given
2) $\angle A \cong \angle E$	2) ____________
3) $\overline{AB} \cong \overline{EF}$, and $\overline{AC} \cong \overline{EG}$	3) ____________
4) $\triangle ABC \cong \triangle EFG$	4) ____________

10. Given $\triangle ABP$ and $\triangle JKP$ with $\angle A \cong \angle J$ and $\overline{AP} \cong \overline{JP}$. Prove $\triangle ABP \cong \triangle JKP$.



Statement	Reason
1) $\triangle ABC$, $\triangle JKP$	1) Given
2) ____________________	2) Given
3) $\angle APB \cong \angle JPK$	3) ____________________
4) $\triangle ABP \cong \triangle JKP$	4) ____________________