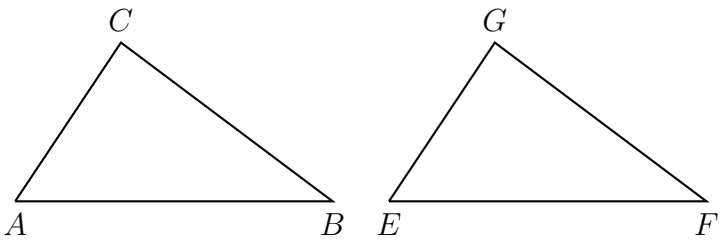
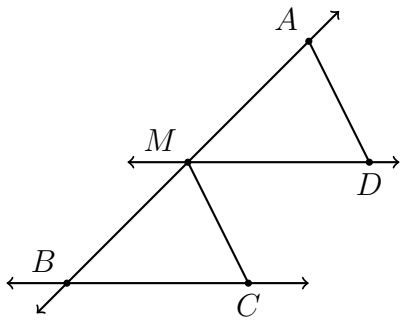
9.4 Classwork: Triangle congruence proofs

1. 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)



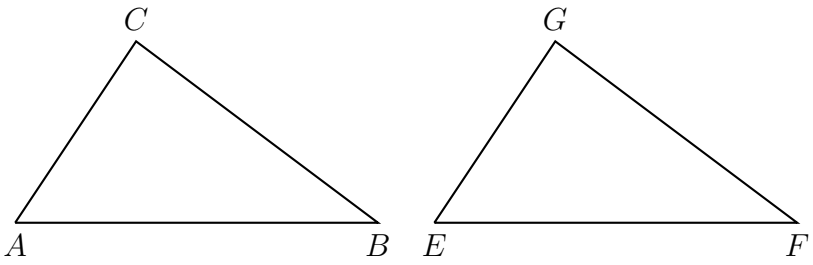
Statement	Reason
1) $\triangle ABC$, $\triangle EFG$	1) Given
2) $\overline{AB} \cong \overline{EF}$	2) _____
3) $\overline{BC} \cong \overline{FG}$, $\overline{AC} \cong \overline{EG}$	3) _____
4) $\triangle ABC \cong \triangle EFG$	4) _____

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



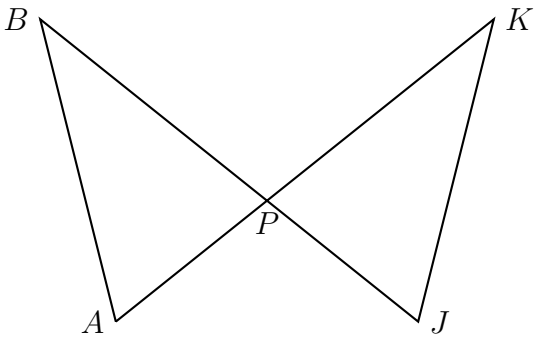
Statement	Reason
1) $\overleftrightarrow{MD} \| \overleftrightarrow{BC}$	1) _____
2) M is the midpoint of $\overline{AB}$	2) _____
3) _____ $\cong \overline{BC}$	3) Given
4) $\angle AMD \cong \angle MBC$	4) _____
5) _____ $\cong \overline{AM}$	5) Definition of a midpoint
6) $\triangle ADM \cong \triangle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

3. 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) _____

4. 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) _____

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

5. Vertical angles w segment bisectors
6. Transversal corresponding
7. Transversal with shared side on transversal
8. Two inscribed in circle with vertical angles
9. Inscribed in circle triangle with external angle, showing arc measure relationship
10. Rotate triangle