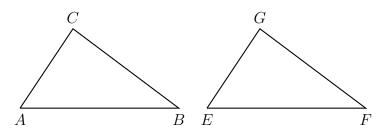
9.4 Classwork: Triangle congruence proofs

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)



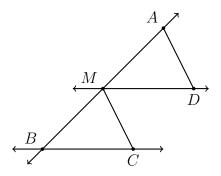
Statement

27 February 2020

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

Reason

- 1) Given
- 2) _____
- 3) _____
- 4) _____
- 2. Two parallel lines intersect a transversal, $\overrightarrow{MD}||\overrightarrow{BC}, \overline{MD} \cong \overline{BC}$ and M is the midpoint of \overline{AB} . Prove $\triangle ADM \cong \triangle MCB$.



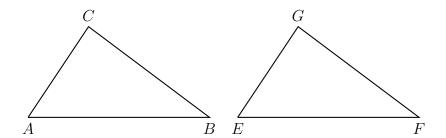
Statement

- 1) $\overrightarrow{MD}||\overrightarrow{BC}|$
- 2) M is the midpoint of \overline{AB}
- 3) $\underline{\hspace{1cm}} \cong \overline{BC}$
- 4) $\angle AMD \cong \angle MBC$
- 5) $\cong \overline{AM}$
- 6) $\triangle ADM \cong \triangle MCB$

Reason

- 1) _____
- 2) _____
- 3) Given
- 4) _____
- 5) Definition of a midpoint
- 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 $\triangle ABC\cong \triangle EFG$.

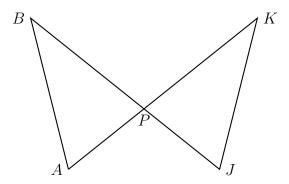


Statement

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

$\underline{\text{Reason}}$

- 1) Given
- 2) _____
- 3) _____
- 4) _____
- 4. Given $\triangle ABP$ and $\triangle JKP$ with $\angle A \cong \angle J$ and $\overline{AP} \cong \overline{JP}$. Prove $\triangle ABP \cong \triangle JKP$.



<u>Statement</u>

- 1) $\triangle ABC$, $\triangle JKP$
- 2)
- 3) $\angle APB \cong \angle JPK$
- 4) $\triangle ABP \cong \triangle JKP$

Reason

- 1) Given
- 2) Given
- 3) ______
- 4) _____

Name:

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