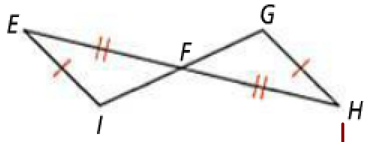
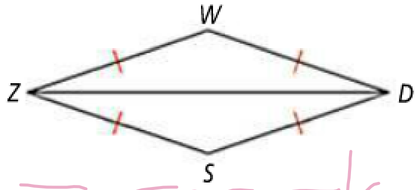
**9. Given:** $\overline{IE} \cong \overline{GH}$, $\overline{EF} \cong \overline{HF}$,
Proof
$F$ is the midpoint of $\overline{GI}$
**Prove:** $\triangle EFI \cong \triangle HFG$




| | |
|---|---|
| $\overline{IE} \cong \overline{GH}$, $\overline{EF} \cong \overline{HF}$ | Given |
| $\overline{GF} \cong \overline{FI}$ | Definition of midpoint |
| $\triangle EFI \cong \triangle HFG$ | SSS |

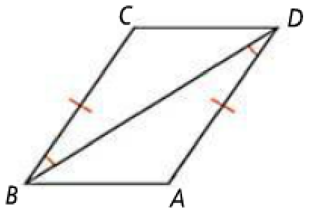
**10. Given:** $\overline{WZ} \cong \overline{ZS} \cong \overline{SD} \cong \overline{DW}$
Proof
**Prove:** $\triangle WZD \cong \triangle SDZ$




| | |
|---|---|
| $\overline{WZ} \cong \overline{ZS} \cong \overline{SD} = \overline{DW}$ | Given |
| $\overline{DZ} \cong \overline{DZ}$ | Reflexive |
| $\triangle WZD \cong \triangle SDZ$ | SSS |

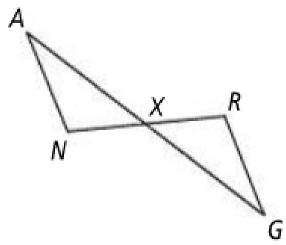
Oct 17-12:52 PM

**16. Given:** $\overline{BC} \cong \overline{DA}$, $\angle CBD \cong \angle ADB$
Proof
**Prove:** $\triangle BCD \cong \triangle DAB$




| | |
|---|---|
| $\overline{BC} \cong \overline{DA}$, $\angle CBD \cong \angle ADB$ | Given |
| $\overline{BD} \cong \overline{BD}$ | Reflexive |
| $\triangle BCD \cong \triangle DAB$ | SAS |

**17. Given:** $X$ is the midpoint of $\overline{AG}$ and $\overline{NR}$.
Proof
**Prove:** $\triangle ANX \cong \triangle GRX$

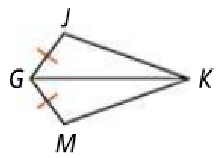



| | |
|---|---|
| X is midpoint of $\overline{AG}$ and $\overline{NR}$ | Given |
| $\overline{AX} \cong \overline{XG}$, $\overline{NX} \cong \overline{XR}$ | Definition of midpoint |
| $\angle AXN \cong \angle RXG$ | Vertical Angles Theorem |
| $\triangle ANX \cong \triangle GRX$ | SAS |

Oct 17-12:53 PM

**28. Given:** $\overline{GK}$ bisects $\angle JGM$, $\overline{GJ} \cong \overline{GM}$

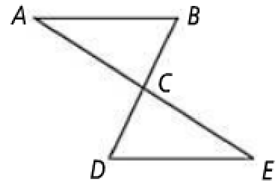
Proof **Prove:** $\triangle GJK \cong \triangle GMK$



| | |
|---|---|
| $\overline{GK}$ bisects $\angle JGM$, $\overline{GJ} \cong \overline{GM}$ | Given |
| $\overline{GK} \cong \overline{GK}$ | Reflexive |
| $\angle JGK \cong \angle KGM$ | Definition of bisector |
| $\triangle GJK \cong \triangle GMK$ | SAS |

**29. Given:** $\overline{AE}$ and $\overline{BD}$ bisect each other.

Proof **Prove:** $\triangle ACB \cong \triangle ECD$

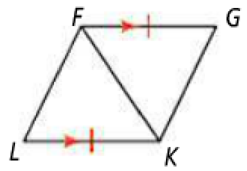


| | |
|---|---|
| $\overline{AE}$ and $\overline{BD}$ bisect each other | Given |
| $\overline{AC} \cong \overline{CE}$, $\overline{BC} \cong \overline{CD}$ | Definition of bisector |
| $\angle BCA \cong \angle DCE$ | Verticals Angles Theorem |
| $\triangle ACB \cong \triangle ECD$ | SAS |

Oct 17-12:54 PM

**30. Given:** $\overline{FG} \parallel \overline{KL}$, $\overline{FG} \cong \overline{KL}$

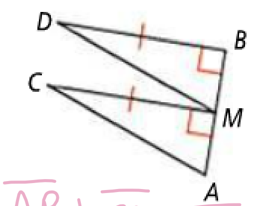
Proof **Prove:** $\triangle FGK \cong \triangle KLF$



| | |
|---|---|
| $\overline{FG} \parallel \overline{KL}$, $\overline{FG} \cong \overline{KL}$ | Given |
| $\overline{KF} \cong \overline{KF}$ | Reflexive |
| $\angle GFK \cong \angle LKF$ | Alternate Interior Angles Theorem |
| $\triangle FGK \cong \triangle KLF$ | SAS |

**31. Given:** $\overline{AB} \perp \overline{CM}$, $\overline{AB} \perp \overline{DB}$, $\overline{CM} \cong \overline{DB}$, $M$ is the midpoint of $\overline{AB}$

Proof **Prove:** $\triangle AMC \cong \triangle MBD$



| | |
|---|---|
| $\overline{AB} \perp \overline{CM}$, $\overline{AB} \perp \overline{DB}$, $\overline{CM} \cong \overline{DB}$, M is midpoint of $\overline{AB}$ | Given |
| $\overline{AM} \cong \overline{MB}$ | Definition of midpoint |
| $\angle DBM \cong \angle CMA$ | All right angles are congruent |
| $\triangle AMC \cong \triangle MBD$ | SAS |

Oct 17-12:54 PM