

Midpoint Proofs

Given: Y is the midpoint of \overline{XZ}

Prove: $\overline{XY} \cong \overline{YZ}$



S	R
1. Y is MP of \overline{XZ}	1. Given
2. $XY = YZ$	2. Def'n of MP
3. $\overline{XY} \cong \overline{YZ}$	3. Def'n of \cong

Given: H is the midpoint of \overline{GI}

I is the midpoint of \overline{HJ}

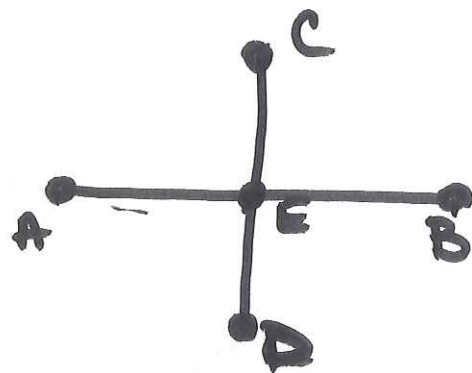
Prove: $\overline{GH} \cong \overline{IJ}$



S	R
1. H is MP of \overline{GI} and I is MP of \overline{HJ}	1. Given.
2. $\overline{GH} \cong \overline{HI}$ $\overline{HI} \cong \overline{IJ}$	2. MP theorem
3. $\overline{GH} \cong \overline{IJ}$	3. Transitive Property

Given: E is MP of \overline{AB} and \overline{CD}
 $AB = CD$

Prove: $\overline{AE} \cong \overline{ED}$



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1. E is MP of \overline{AB} and \overline{CD}
2. $\overline{AE} \cong \overline{EB}$ & $\overline{CE} \cong \overline{ED}$
3. $AE = EB = \frac{1}{2}AB$ &
 $CE = ED = \frac{1}{2}CD$
4. $AB = CD$
5. $\frac{1}{2}AB = \frac{1}{2}CD$
6. $AE = ED$
7. $\overline{AE} \cong \overline{ED}$

1. Given
2. MP Theorem
3. Def'n of \cong
4. ~~Given~~
5. Multiplication P.
6. Substitution
7. Def'n of \cong