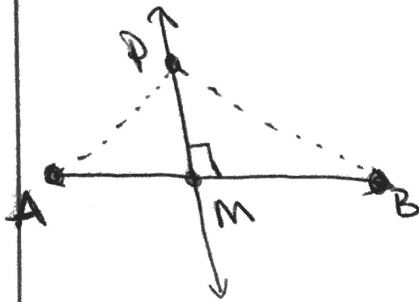


#1

Given: A point on the perpendicular bisector of a segment

Show: The point is equidistant from the segment endpoints



Steps	Reasons
① \overleftrightarrow{PM} is the perpendicular bisector of \overline{AB}	Given
② M is the midpoint of \overline{AB}	Def. of a Perpendicular Bisector
③ $\overline{AM} \cong \overline{MB}$	Def. of Midpoint
④ $\angle AMP$ and $\angle BMP$ are right angles	Def. of a Perpendicular Bisector
⑤ $m\angle AMP = m\angle BMP = 90^\circ$	Def. of Right angles
⑥ $\angle AMP \cong \angle BMP$	Def. of Congruent \angle 's
⑦ $\overline{PM} \cong \overline{PM}$	Reflexive Prop. of Congruence
⑧ $\triangle AMP \cong \triangle BMP$	SAS Postulate
⑨ $\overline{AP} \cong \overline{BP}$	CPCTC
⑩ $m\overline{AP} = m\overline{BP}$	Def. of Congruence