## 5.2 Perpendicular Bisectors of Triangles

If you were given a perpendicular bisector of a segment, what is the relationship of any point on the perpendicular bisector to the endpoints of that segment?

## Proof of the Perpendicular Bisector Theorem

Given: $\overleftrightarrow{C P}$ is the $\perp$ bisector of $\overline{A B}$

Prove: $C A=C B$

Statements

Statements Reasons

If you were given a point equidistant from the endpoints of a segment, what object must that point lie on?

## Proof of the Converse of the Perpendicular Bisector Theorem

Given: $\overline{D A} \cong \overline{D B}$

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\overrightarrow{D P} \perp \overrightarrow{A B}
$$

Prove: $\overleftrightarrow{D P}$ is the bisector of $\overrightarrow{A B}$

Statements

Reasons

Perpendicular Bisector Theorem
If a point lies on the perpendicular bisector of a segment, then it is $\qquad$ from the $\qquad$ of the segment.

Converse of the Perp. Bisector Theorem If a point is $\qquad$ from the endpoints of a segment, then it lies on the
$\qquad$ of the segment.

## Practice

Find the indicated measure. Explain your reasoning.

1) $A B$


## Practice

Find the indicated measure. Explain your reasoning.
2) $E G$


## Practice

Find the indicated measure. Explain your reasoning.

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