

Definitions

Bisect: to divide a segment or an angle into two congruent parts

"**Bisector**": usually a line segment that splits another line segment or angle in 2 equal parts.

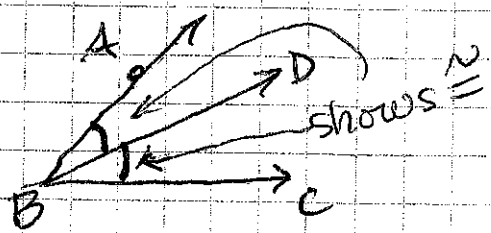
Midpoint: A point that divides a segment or an arc into two congruent parts.

Trisect: To divide a segment or an angle into three congruent parts.

Proof:

Given: \vec{BD} bisects $\angle ABC$

Prove: $\angle ABD \cong \angle DBC$

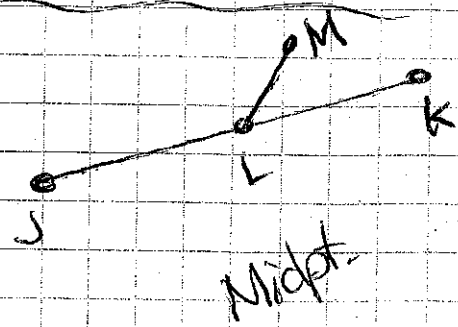


Statement	Reason
① \vec{BD} bisects $\angle ABC$	① Given
② $\angle ABD \cong \angle DBC$	② Def. of bisect

Proof

Given: $\overline{JL} \cong \overline{LK}$

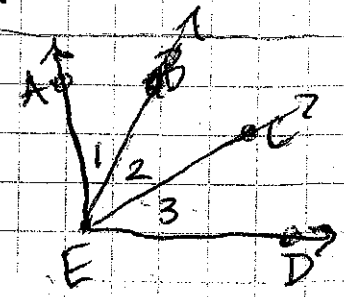
Prove: L is midpoint of \overline{JK}



Statement	Reasons
① $\overline{JL} \cong \overline{LK}$	① Given
② L is midpoint of \overline{JK}	② Defn of Midpoint

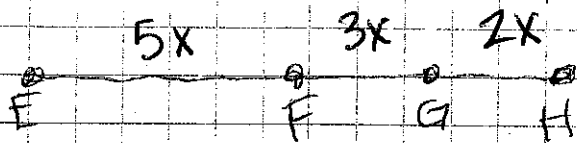
Given: \vec{EB} & \vec{EC} trisect $\angle AED$

Prove: $\angle 1 \cong \angle 2 \cong \angle 3$



Statement	Reasons
① \vec{EB} & \vec{EC} trisect $\angle AED$	① Given
② $\angle 1 \cong \angle 2 \cong \angle 3$	② Def. of trisect

\overline{EH} is divided by
F and G in a
ratio of $5:3:2$



$$EH = 30 \quad FG = ?$$

Midpoint of \overline{EH} is F

$$5x + 3x + 2x = 30$$

$$\frac{10x}{10} = \frac{30}{10}$$

$$x = 3$$

$$FG = 3x = 3(3) = \boxed{9}$$