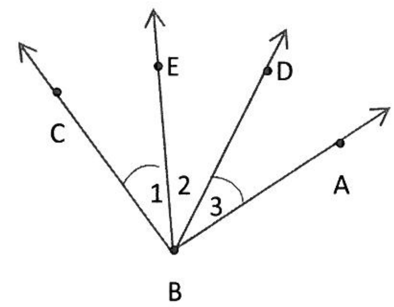
GIVEN $m < 1 = m < 3$

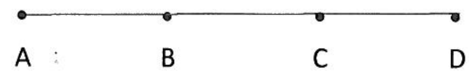
PROVE $m < EBA = m < CBD$




| STATEMENTS | REASONS |
|---|---|
| $m < 1 = m < 3$ | Given |
| $m < EBA = m < 2 + m < 3$ | Angle Addition Postulate |
| $m < EBA = m < 2 + m < 1$ | Substitution Property of Equality |
| $m < 1 + m < 2 = m < CBD$ | Angle Addition Postulate |
| $m < EBA = m < CBD$ | Transitive Property of Equality |

GIVEN B is the midpoint of $\overline{AC}$

C is the midpoint of $\overline{BD}$



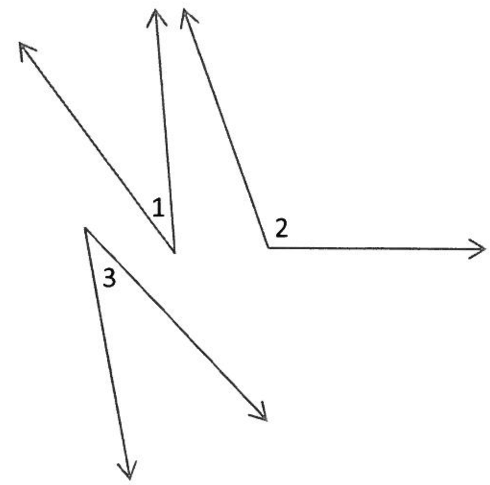

PROVE $AB = CD$

| STATEMENTS | REASONS |
| --- | --- |
| B is the midpoint of $\overline{AC}$ | Given |
| C is the midpoint of $\overline{BD}$ | Given |
| AB = BC | Definition of midpoint |
| BC = CD | Definition of midpoint |
| $BC = BC$ | Reflexive Property |
| $AB = CD$ | Substitution Property of Equality |

GIVEN $< 1 \textit{ is supplementary to } < 3$

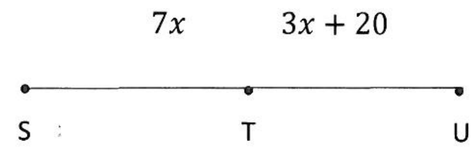
$< 2 \textit{ is supplementary to } < 3$

PROVE $< 1 \cong < 2$




| STATEMENTS | REASONS |
|---|---|
| $< 1 \textit{ is supplementary to } < 3$ | Given |
| $m < 1 + m < 3 = 180°$ | Definition of Supplementary Angles |
| $< 2 \textit{ is supplementary to } < 3$ | Given |
| $m < 2 + m < 3 = 180°$ | Definition of Supplementary Angles |
| $m < 1 + m < 3 = m < 2 + m < 3$ | Substitution Property of Equality |
| $m < 1 = m < 2$ | Subtraction Property of Equality |
| $< 1 \cong < 2$ | Definition of Congruent Angles |

GIVEN T is the midpoint of $SU$

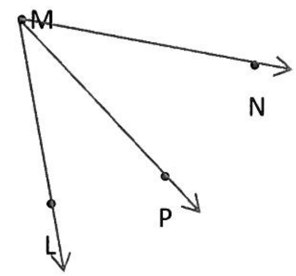



PROVE $x = 5$

| STATEMENTS | REASONS |
|---|---|
| T is the midpoint of $\overline{SU}$ | Given |
| $ST = TU$ | Definition of midpoint |
| $7x = 3x + 20$ | Substitution Property of Equality |
| $4x = 20$ | Subtraction Property of Equality |
| $x = 5$ | Division Property of Equality |

GIVEN $\overrightarrow{MP} bisects < LMN$

PROVE $2(m < LMP) = m < LMN$

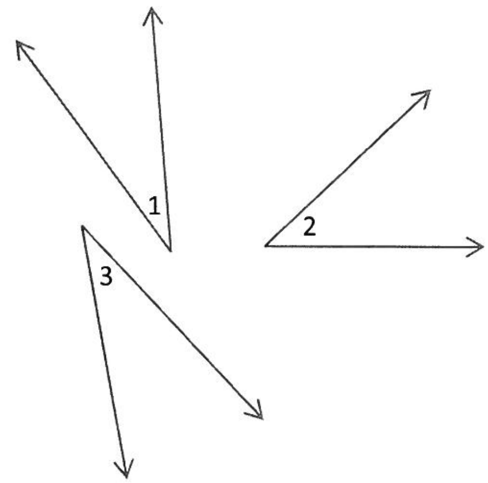



| STATEMENTS | REASONS |
|---|---|
| $\overrightarrow{MP} bisects < LMN$ | Given |
| $m < LMP = m < NMP$ | Definition of Angle Bisector |
| $m < LMP + m < NMP = m < LMN$ | Angle Addition Postulate |
| $m < LMP + m < LMP = m < LMN$ | Substitution Property of Equality |
| $2(m < LMP) = m < LMN$ | Combine Like Terms |

GIVEN $< 1 \; is \; a \; complement \; of < 2$

$< 2 \cong < 3$

PROVE $< 1 \; is \; a \; complement \; of < 3$




| STATEMENTS | REASONS |
| --- | --- |
| $< 1 \; is \; a \; complement \; of < 2$ | Given |
| $m < 1 + m < 2 = 90°$ | Definition of Complementary Angles |
| $< 2 \cong < 3$ | Given |
| $m < 2 = m < 3$ | Definition of Congruent Angles |
| $m < 1 + m < 3 = 90°$ | Substitution Property of Equality |
| $< 1 \; is \; a \; complement \; of < 3$ | Definition of Complement |