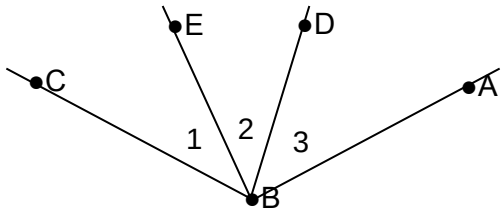
Problem #1

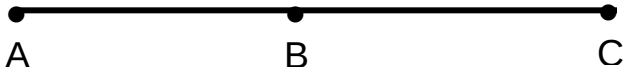
Given: $m\angle 1 = m\angle 3$
Prove: $m\angle EBA = m\angle DBC$



Directions: Place the statements on the left and the appropriate reason to the right.

Problem #2

Given: AC = AB + AB
Prove: AB = BC



Directions: Place the statements on the left and the appropriate reason to the right

Problem #3

Given: M is the midpoint of $\overline{AB}$
Prove: a) AB = 2●AM

Directions: Place the statements on the left and the appropriate reason to the right.

Problem #4

Given: $\overrightarrow{QS}$ is an angle bisector of $\angle PQR$

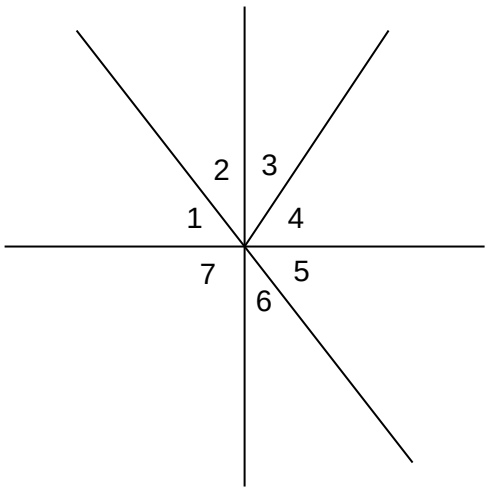
Prove: $m\angle PQS = \frac{1}{2} m\angle PQR$

Directions: Place the statements on the left and the appropriate reason to the right.

Problem #5

Given: $\angle 2 \cong \angle 3$

Prove: $\angle 3 \cong \angle 6$



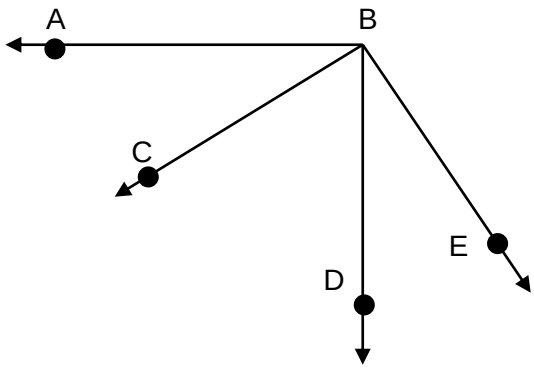
Directions: Place the statements on the left and the appropriate reason to the right.

Problem #6

Given: $\overline{AB} \perp \overline{BD}$

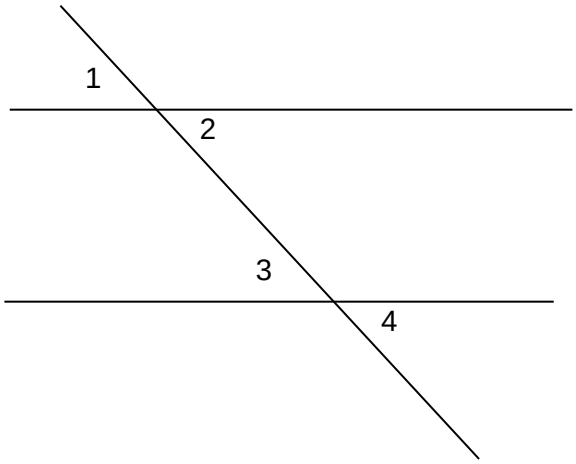
$\overline{CB} \perp \overline{EB}$

Prove: $\angle ABD \cong \angle CBE$



Directions: Place the statements on the left and the appropriate reason to the right

Problem #7

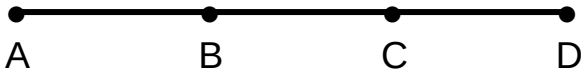


Given: $\angle 1 \cong \angle 3$

Prove: $\angle 2 \cong \angle 4$

Directions: Place the statements on the left and the appropriate reason to the right.

Problem #8



Given: B is the midpoint of $\overline{AC}$

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

Prove: AB = CD

Directions: Place the statements on the left and the appropriate reason to the right.

Problem #1

$m\angle 1 = m\angle 3$	Given
$m\angle EBA = m\angle 3 + m\angle 2$	Angle Addition Postulate
$m\angle EBA = m\angle 1 + m\angle 2$	Substitution Property of Equality
$m\angle 1 + m\angle 2 = m\angle DBC$	Angle Addition Postulate
$m\angle EBA = m\angle DBC$	Transitive Property of Equality

Problem #2

$AC = AB + AB$	Given
$AB + BC = AC$	Segment Addition Postulate
$AB + AB = AB + BC$	Transitive Property of Equality
$AB = BC$	Subtraction Property of Equality

Problem #3

M is the midpoint of $\overline{AB}$	Given
$\overline{AM} \cong \overline{MB}$	Definition of Midpoint
$AM = MB$	Definition of congruent segments
$AM + MB = AB$	Segment Addition Postulate
$AM + AM = AB$	Substitution Property of Equality
$2AM = AB$	Combine Like Terms
$AM = \frac{1}{2}AB$	Division Property of Equality

Problem #4

$\overrightarrow{QS}$ is an angle bisector of $\angle PQR$	Given
$\angle PQS \cong \angle SQR$	Definition of Angle Bisector
$m\angle PQS = m\angle SQR$	Definition of Congruent Angles
$m\angle PQS + m\angle SQR = m\angle PQR$	Angle Addition Postulate
$m\angle PQS + m\angle PQS = m\angle PQR$	Substitution Property of Equality
$2 \bullet m\angle PQS = m\angle PQR$	Combine Like Terms
$m\angle PQS = \frac{1}{2}m\angle PQR$	Division Property of Equality

Problem #5

$\angle 2 \cong \angle 3$	Given
$\angle 2 \cong \angle 6$	Vertical $\angle$'s $\cong$
$\angle 3 \cong \angle 6$	Transitive

Problem #6

$\overline{AB} \perp \overline{BD}$	Given
$\overline{CB} \perp \overline{EB}$	
$\angle ABD$ is right angle	
$\angle$ CBE is right angle	Perpendicular $\longrightarrow$ Right Angle
$\angle ABD \cong \angle CBE$	All right angles are congruent

Problem #7

$\angle 1 \cong \angle 3$	Given
$\angle 1 \cong \angle 2$ and $\angle 3 \cong \angle 4$	Vertical $\angle$'s $\cong$
$\angle 3 \cong \angle 2$	Transitive
$\angle 2 \cong \angle 4$	Transitive

Problem # 8

B is the midpoint of $\overline{AC}$	Given
C is the midpoint of $\overline{BD}$	
$\overline{AB} \cong \overline{BC}$	Definition of Midpoint
$\overline{BC} \cong \overline{CD}$	
$\overline{AB} \cong \overline{CD}$	Transitive
AB = CD	Definition of congruent segments