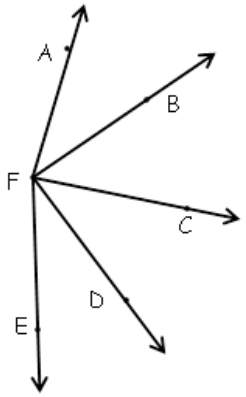


Level 1: A

Given: ÐAFB @ÐDFE

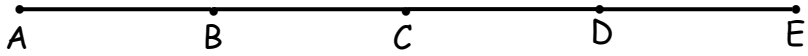
Prove: mÐCFD + mÐAFB = mÐCFE

Statement	Reason
1. $< AFB \cong < DFE \text{ or } m < AFB = m < DFE$	1. Given
2. $m < CFD + m < DFE = m < CFE$	2. Angle Addition Postulate
3. $m < CFD + m < AFB = m < CFE$	3. Substitution Property

Level 1: B

Given: $\overline{AB} \cong \overline{DE}$

Prove: CD + AB = CE



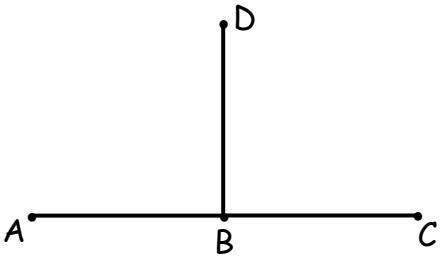
Statement	Reason
1. $\overline{AB} \cong \overline{DE} \text{ or } AB = DE$	1. Given
2. $CD + DE = CE$	2. Segment Addition Postulate
3. $CD + AB = CE$	3. Substitution Property

Level 1: C

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

AB = BD

Prove: BD = BC



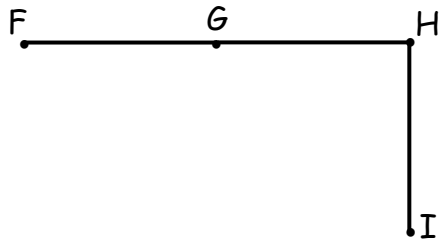
Statement	Reason
1. B is the midpoint of $\overline{AC}$	1. Given
2. $AB = BC$	2. Definition of Midpoint
3. $AB = BD$	3. Given
4. $BD = BC$	4. Substitution Property

Level 1: D

Given: $\overline{G}$ is the midpoint of $\overline{FH}$;

$\overline{FG} \cong \overline{HI}$

Prove: $\overline{GH} \cong \overline{HI}$



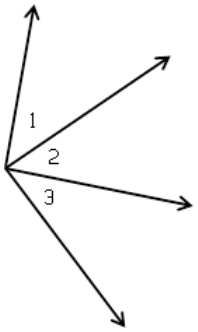
Statement	Reason
1. G is the midpoint of $\overline{FH}$	1. Given
2. $\overline{FG} \cong \overline{GH}$	2. Definition of Midpoint
3. $\overline{HI} \cong \overline{GH}$	3. Substitution Property
4. $\overline{GH} \cong \overline{HI}$	4. Symmetric Property

Level 2: A

Given: Ð1 and Ð2 are comp. Ð*s*;

Ð2 and Ð3 are comp. Ð*s*

Prove: *m*Ð1 = *m*Ð3

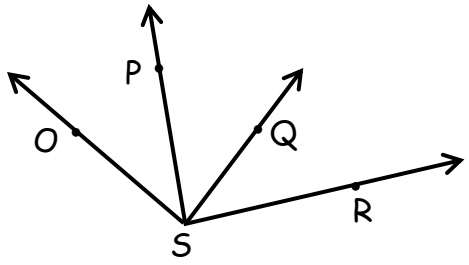


Statement	Reason
1. < 1 and < 2 are comp. $<'s$; < 2 and < 3 are comp. $<'s$	1. Given
2. $m < 1 + m < 2 = 90$ $m < 2 + m < 3 = 90$	2. Def. of Comp. <'s
3. $m < 1 + m < 2 = m < 2 + m < 3$	3. Substitution Property
4. $m < 2 = m < 2$	4. Reflexive Property
5. $m < 1 = m < 3$	5. Subtraction Property

Level 2: B

Given: $\overrightarrow{SP}$ bisects ÐOSQ;
$\overrightarrow{SQ}$ bisects ÐPSR

Prove: ÐOSP @ÐQSR

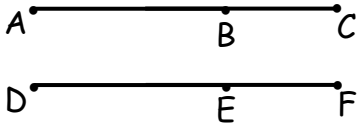


Statement	Reason
1. $\overrightarrow{SP}$ bisects ÐOSQ; $\overrightarrow{SQ}$ bisects ÐPSR	1. Given
2. $m < OSP = m < PSQ$, $m < PSQ = m < QSR$	2. Def. of Angle Bisector
3. $m < OSP = QSR$	3. Substitution Property

Level 2: C

Given: $AB = DE$;
$BC = EF$

Prove: $AC = DF$

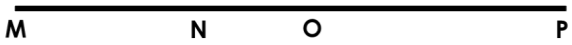


Statement	Reason
1. $AB = DE$; $BC = EF$	1. Given
2. $AB + BC = DE + EF$	2. Addition Property
3. $AB + BC = AC$; $DE + EF = DF$	3. Segment Addition Property
4. $AC = DF$	4. Substitution Property

Level 2: D

Given: $MO = NP$

Prove: $MN = OP$

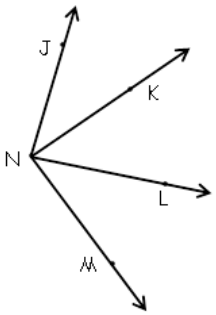


Statement	**Reason**
1. $MO = NP$;	1. Given
2. $MN + NO = MO$ $NO + OP = NP$	2. Segment Addition Postulate
3. $MN + NO = NO + OP$	3. Substitution Property
4. $NO = NO$	4. Reflexive Property
5. $MN = OP$	5. Subtraction Property

Level 3: A

Given: ÐJNK @ÐLNM

Prove: ÐJNL @ÐKNM



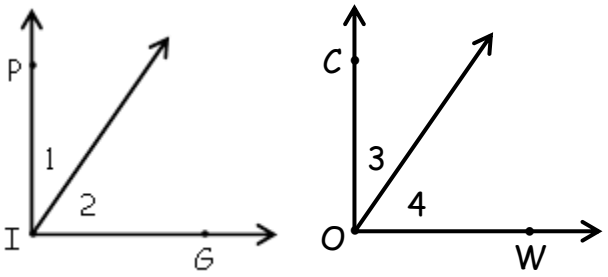
Statement	**Reason**
1. $< JNK \cong < LNM \; or \; m < JNK = m < LNM$;	1. Given
2.$m < KNL = m < KNL$	2. Reflexive Property
3. $m < JNK + m < KNL = m < KNL + m < LNM$	3. Addition Property
4. $m < JNK + m < KNL = m < JNL$; $m < KNL + m < LNM = m < KNM$	4. Angle Addition Postulate
5. $m < JNL = m < KNM \;\; or \;\; < JNL \cong < KNM$	5. Substitution Property

Level 3: B

Given: $m\angle PIG = m\angle COW$

$m\angle 1 = m\angle 4$

Prove: $m\angle 2 = m\angle 3$



Statement	Reason
1. $m < PIG = m < COW$;	1. Given
2. $m < 1 + m < 2 = m < PIG$ $m < 3 + m < 4 = m < COW$	2. Angle Addition Postulate
3. $m < 1 + m < 2 = m < 3 + m < 4$	3. Substitution Property
4. $m < 1 = m < 4$	4. Given
5. $m < 2 = m < 3$	5. Subtraction Property

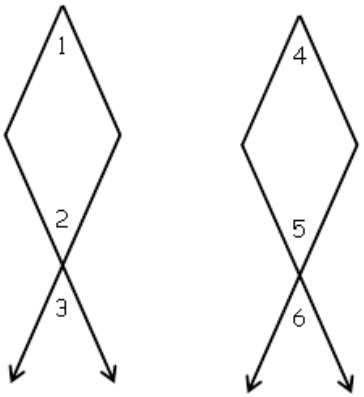
Level 3: C

Given: $m\angle 1 = m\angle 3$

$m\angle 4 = m\angle 6$

$m\angle 1 = m\angle 4$

Prove: $m\angle 2 = m\angle 5$

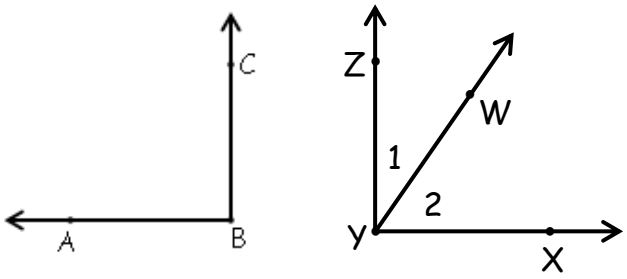


Statement	Reason
1. $m < 1 = m < 3; m < 4 = m < 6; m < 1 = m < 4$	1. Given
2. $m < 3 = m < 4$	2. Substitution Property
3. $m < 3 = m < 6$	3. Substitution Property
4. $m < 2 = m < 3; m < 5 = m < 6$	4. Vertical Angle Theorem
5. $m < 2 = m < 5$	5. Substitution Property

Level 3: D

Given: Ð1 and Ð2 are comp. Ðs; $\overline{AB} \perp \overline{BC}$

Prove: ÐXYZ @ÐABC

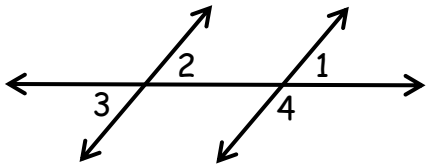


Statement	**Reason**
1. < 1 and < 2 are comp. $< 's$	1. Given
2. $m < 1 + m < 2 = 90$	2. Def. of comp. <'s
3. $m < 1 + m < 2 = m < XYZ$	3. Angle Addition Postulate
4. $m < XYZ = 90$	4. Substitution Property
5. $\overline{AB} \perp \overline{BC}$	5. Given
6. $m < ABC = 90$	6. Def. of Perpendicular Lines
7. $m < XYZ = m < ABC$ or $< XYZ \cong < ABC$	7. Substitution Property

Level 4: A

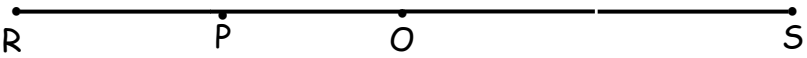
Given: <3 and <4 are supp. <'s;

Prove: Ð1 @Ð2



Statement	**Reason**
1. < 3 and < 4 are supp. $< 's$	1. Given
2. $m < 3 + m < 4 = 180$	2. Def. of supp. <'s
3. $m < 1 + m < 4 = m < 180$	3. Angle Addition Postulate
4. $m < 1 + m < 4 = m < 3 + m < 4$	4. Substitution Property
5. $m < 4 = m < 4$	5. Reflexive Property
6. $m < 1 = m < 3$	6. Subtraction Property
7. $m < 3 = m < 2$	7. Vertical Angle Theorem
8. $m < 1 = m < 2$	8. Substitution Property

Level 4: B



Given: O is the midpoint of $\overline{RS}$;
P is the midpoint of $\overline{RO}$

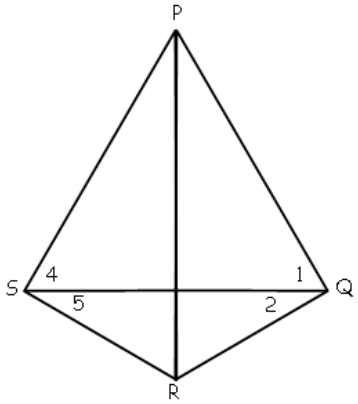
Prove: $RP = \frac{1}{4}RS$

Statement	**Reason**
1. O is the midpoint of $\overline{RS}$; P is the midpoint of $\overline{RO}$	1. Given
2. $RO = \frac{1}{2}RS;\ RP = \frac{1}{2}RO$	2. Midpoint Theorem
3. $RP = \frac{1}{2}\left(\frac{1}{2}RS\right)$; $RP = \frac{1}{4}RS$	3. Substitution Property

Level 4: C

Given: $\overline{PQ} \cong \overline{QR}$
$\overline{PS} \cong \overline{SR}$
Ð1 @Ð4

Prove: Ð2 @Ð5

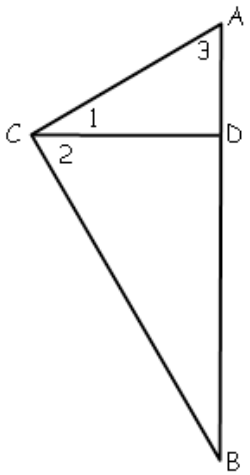


Statement	**Reason**
1. $\overline{PQ} \cong \overline{QR}$; $\overline{PS} \cong \overline{SR}$	1. Given
2. $m < PQR = 90$; $m < PSR = 90$	2. Def. of Perpendicular Lines
3. $m < PQR = m < PSR$	3. Substitution Property
4. $m < 1 + m < 2 = m < PQR$; $m < 4 + m < 5 = m < PSR$	4. Angle Addition Postulate
5. $m < 1 + m < 2 = m < 4 + m < 5$	5. Substitution Property
6. $< 1 \cong < 4$ *or* $m < 1 = m < 4$	6. Given
7. $m < 2 = m < 5$ *or* $< 2 \cong < 5$	7. Subtraction Property

Level 4: D

Given: Ð1 and Ð3 are comp. Ðs; $\overline{AC} \perp \overline{BC}$

Prove: Ð2 @ Ð3



Statement	**Reason**
1. < 1 and < 3 are comp. $< 's$	1. Given
2. $m < 1 + m < 3 = 90$	2. Def. of comp. <'s
3. $\overline{AC} \perp \overline{BC}$	3. Given
4. $m < ACB = 90$	4. Def. of Perpendicular Lines
5. $m < 1 + m < 2 = m < ACB$	5. Angle Addition Postulate
6. $m < 1 + m < 2 = 90$	6. Substitution Property
7. $m < 1 + m < 2 = m < 1 + m < 3$	7. Substitution Property
8. $m < 1 = m < 1$	8. Reflexive Property
9. $m < 2 = m < 3$	9. Subtraction Property