

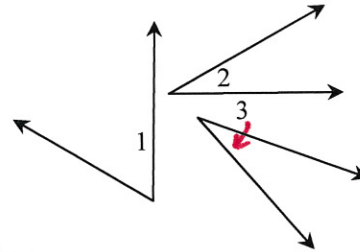
2.5 - Proofs About Angle Pairs and Segments (Part 1)

1) Given: $PQ = RS$

Prove: $PR = QS$



Statement	Reasons
1. $PQ = RS$	Given
2. $PQ + QR = RS + QR$	Add. Property of Equality
3. $PQ + QR = PR$	Segment Addition Postulate
4. $RS + QR = QS$	Segment Addition Postulate
5. $PR = QS$	Substitution Property



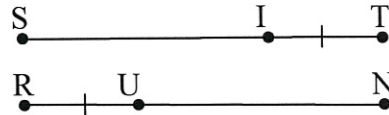
2) Given: $\angle 1$ is a complement of $\angle 2$
 $\angle 2 \cong \angle 3$

Prove: $\angle 1$ is a complement of $\angle 3$

Statement	Reasons
1. $\angle 1$ is a complement of $\angle 2$	Given
2. $m\angle 1 + m\angle 2 = 90$	Def. of Complementary Angles
3. $\angle 2 \cong \angle 3$	Given
4. $m\angle 2 = m\angle 3$	Def. of Congruency
5. $m\angle 1 + m\angle 3 = 90$	Substitution Property
6. $\angle 1$ is a complement of $\angle 3$	Def. of Complementary Angles

3) Given: $ST = RN$; $IT = RU$

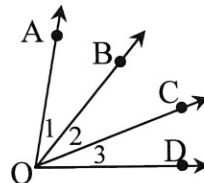
Prove: $SI = UN$



Statement	Reasons
1. $ST = RN$	Given
2. $ST = SI + IT$; $RN = RU + UN$	Segment Addition Postulate
3. $SI + IT = RU + UN$	Substitution Property
4. $IT = RU$	Given
5. $SI = UN$	Subtraction Property of Equality

4) Given: $m\angle AOD$ as shown

Prove: $m\angle AOD = m\angle 1 + m\angle 2 + m\angle 3$



Statement

Reasons

1. $m\angle AOD = m\angle AOC + m\angle 3$

Angle Addition Postulate

2. $m\angle AOC = m\angle 1 + m\angle 2$

Angle Addition Postulate

3. $m\angle AOD = m\angle 1 + m\angle 2 + m\angle 3$

Substitution Property

5) Given: $FL = AT$

Prove: $FA = LT$



Statement

Reasons

1. $FL = AT$

Given

2. $LA = LA$

Reflexive Property

3. $FL + LA = AT + LA$

Addition Property of Equality

4. $FL + LA = FA$; $LA + AT = LT$

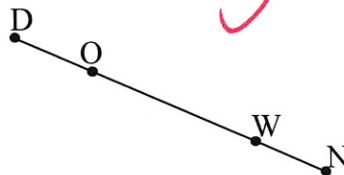
Segment Addition Postulate

5. $FA = LT$

Substitution Property

6) Given: $DW = ON$

Prove: $DO = WN$



Statement

Reasons

1. $DW = ON$

Given

2. $DW = DO + OW$; $ON = OW + WN$

Segment Addition Postulate

3. $DO + OW = OW + WN$

Substitution Property

4. $OW = OW$

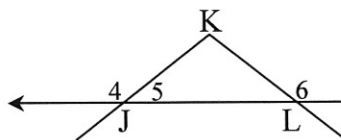
Reflexive Property

5. $DO = WN$

Subtraction Property of Equality

7) Given: $m\angle 4 + m\angle 6 = 180$

Prove: $m\angle 5 = m\angle 6$



Statement

Reasons

1. $m\angle 4 + m\angle 6 = 180$

Given

2. $m\angle 4 + m\angle 5 = 180$

Def. of Linear Pair

3. $m\angle 4 + m\angle 5 = m\angle 4 + m\angle 6$

Substitution Property

4. $m\angle 4 = m\angle 4$

Reflexive Property

5. $m\angle 5 = m\angle 6$

Subtraction Property of Equality