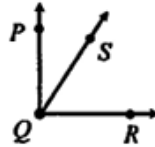


ANGLE PROOFS

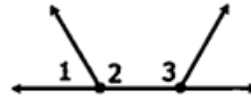
Directions: Complete the proofs below by giving the missing statements and reasons.

- 1 **Given:** $\angle PQR$ is a right angle
Prove: $\angle PQS$ and $\angle SQR$ are complementary



Statements	Reasons
1. $\angle PQR$ is a right angle	1. Given
2. $m\angle PQR = 90^\circ$	2. Def of right angle
3. $m\angle PQS + m\angle SQR = m\angle PQR$	3. Angle Add. Postulate
4. $m\angle PQS + m\angle SQR = 90^\circ$	4. Substitution SUBSTITUTION PROPERTY
5. $\angle PQS$ and $\angle SQR$ are complementary	5. Def. of Complementary \angle 's

- 2 **Given:** $\angle 2 \cong \angle 3$; $\angle 1$ and $\angle 2$ form a linear pair
Prove: $\angle 1$ and $\angle 3$ are supplementary



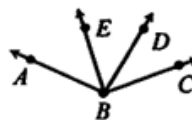
Statements	Reasons
1. $\angle 2 \cong \angle 3$	1. given
2. $m\angle 2 = m\angle 3$	2. Def of congruence
3. $\angle 1$ and $\angle 2$ form a linear pair	3. given LP
4. $\angle 1$ and $\angle 2$ are supplementary	4. Def of linear pair LP = POST.
5. $m\angle 1 + m\angle 2 = 180^\circ$	5. Def of Supplementary \angle 's
6. $m\angle 1 + m\angle 3 = 180^\circ$	6. Substitution
7. $\angle 1$ and $\angle 3$ are supplementary	7. Def of Supplementary \angle 's

- 3 **Given:** $\angle 1$ and $\angle 2$ form a right angle; $m\angle 1 + m\angle 3 = 90^\circ$
Prove: $\angle 2 \cong \angle 3$



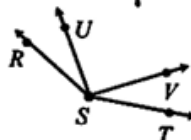
Statements	Reasons
1. $\angle 1$ and $\angle 2$ form a right angle	1. given
2. $\angle 1$ and $\angle 2$ are complementary	2. Complement Theorem
3. $m\angle 1 + m\angle 3 = 90^\circ$	3. given
4. $\angle 1$ and $\angle 3$ are complementary	4. Def of Complementary \angle 's
5. $\angle 2 \cong \angle 3$	5. Congruent Complements Thm

- 4 **Given:** \overline{BE} bisects $\angle ABD$; \overline{BD} bisects $\angle EBC$
Prove: $\angle ABE \cong \angle DBC$



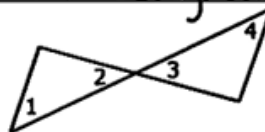
Statements	Reasons
1. \overline{BE} bisects $\angle ABD$	1. Given
2. $\angle ABE \cong \angle EBD$	2. Def of \angle Bisector
3. \overline{BD} bisects $\angle EBC$	3. Given
4. $\angle EBD \cong \angle DBC$	4. Def of \angle Bisector
5. $\angle ABE \cong \angle DBC$	5. Transitive Property

- 5 **Given:** $\angle RSU \cong \angle VST$
Prove: $\angle RSV \cong \angle UST$



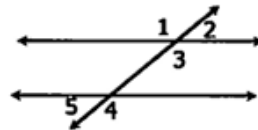
Statements	Reasons
1. $\angle RSU \cong \angle VST$	1. Given
2. $m\angle RSU = m\angle VST$	2. Def of Congruence
3. $m\angle RSU + m\angle USV = m\angle RSV$	3. Angle Add. Postulate
4. $m\angle VST + m\angle USV = m\angle UST$	4. Angle Add. Postulate
5. $m\angle RSU + m\angle USV = m\angle UST$	5. Substitution
6. $m\angle RSV = m\angle UST$	6. Transitive Property
7. $\angle RSV \cong \angle UST$	7. Def. of Congruence

- 6 **Given:** $\angle 1$ and $\angle 2$ are complementary
 $\angle 3$ and $\angle 4$ are complementary
Prove: $\angle 1 \cong \angle 4$



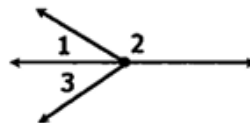
Statements	Reasons
1. $\angle 1$ and $\angle 2$ are complementary	1. Given
2. $\angle 3$ and $\angle 4$ are complementary	2. Given
3. $m\angle 1 + m\angle 2 = 90^\circ$	3. Def of Complementary \angle 's
4. $m\angle 3 + m\angle 4 = 90^\circ$	4. Def of Complementary \angle 's
5. $\angle 2 \cong \angle 3$	5. Vertical angle Theorem
6. $m\angle 2 = m\angle 3$	6. Def of Congruence
7. $m\angle 1 + m\angle 2 = m\angle 3 + m\angle 4$	7. Transitive Property
8. $m\angle 1 + m\angle 3 = m\angle 3 + m\angle 4$	8. Substitution
9. $m\angle 1 = m\angle 4$	9. Subtraction Property
10. $\angle 1 \cong \angle 4$	10. Def of Congruence

- 7 **Given:** $\angle 1 \cong \angle 4$; $\angle 4$ and $\angle 5$ form a linear pair
Prove: $\angle 1$ and $\angle 5$ are supplementary



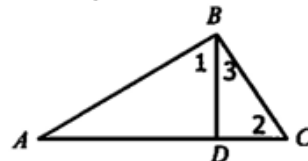
Statements	Reasons
1. $\angle 1 \cong \angle 4$	1. Given
2. $m\angle 1 = m\angle 4$	2. Definition of Congruence
3. $\angle 4$ and $\angle 5$ form a linear pair	3. Given
4. $\angle 4$ and $\angle 5$ are supplementary	4. Supplement Theorem
5. $m\angle 4 + m\angle 5 = 180$	5. Definition of Supplementary Angles
6. $m\angle 1 + m\angle 5 = 180$	6. Substitution
7. $\angle 1$ and $\angle 5$ are supplementary	7. Def of Supp. Angles

- 8 **Given:** $\angle 1$ and $\angle 2$ form a linear pair; $m\angle 2 + m\angle 3 = 180^\circ$
Prove: $\angle 1 \cong \angle 3$



Statements	Reasons
1. $\angle 1$ and $\angle 2$ form a linear pair	1. Given
2. $\angle 1$ and $\angle 2$ are supplementary	2. The Supplement Theorem
3. $m\angle 2 + m\angle 3 = 180^\circ$	3. Given
4. $\angle 2$ and $\angle 3$ are supplementary	4. Definition of Supplementary Angles
5. $\angle 1 \cong \angle 3$	5. Congruent Supplements Thm.

- 9 **Given:** $\overline{AB} \perp \overline{BC}$; $\angle 2$ and $\angle 3$ are complementary
Prove: $\angle 1 \cong \angle 2$



Statements	Reasons
1. $\overline{AB} \perp \overline{BC}$	1. Given
2. $\angle ABC$ is a right angle	2. Def of Perpendicular
3. $m\angle ABC = 90^\circ$	3. Definition of a Right Angle
4. $m\angle 1 + m\angle 3 = m\angle ABC$	4. Angle Add. Postulate
5. $m\angle 1 + m\angle 3 = 90^\circ$	5. Transitive Property
6. $\angle 1$ and $\angle 3$ are complementary	6. Definition of Complementary Angles
7. $\angle 2$ and $\angle 3$ are complementary	7. Given
8. $\angle 1 \cong \angle 2$	8. Congruent Complements Thm.