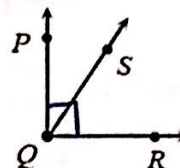


# ANGLE PROOFS

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

Given:  $\angle PQR$  is a right angle

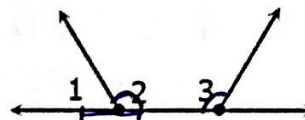
Prove:  $\angle PQS$  and  $\angle SQR$  are complementary



Statements	Reasons
1. $\angle PQR$ is a right angle	1. given
2. $m\angle PQR = 90^\circ$	2. def. right angle
3. $m\angle PQS + m\angle SQR = m\angle PQR$	3. angle addition postulate
4. $m\angle PQS + m\angle SQR = 90^\circ$	4. substitution / transitive
5. $\angle PQS$ and $\angle SQR$ are complementary	5. def. complementary

Given:  $\angle 2 \cong \angle 3$ ;  $\angle 1$  and  $\angle 2$  form a linear pair

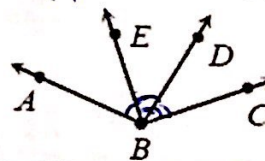
Prove:  $\angle 1$  and  $\angle 3$  are supplementary



Statements	Reasons
1. $\angle 2 \cong \angle 3$	1. given
2. $m\angle 2 = m\angle 3$	2. def. congruence
3. $\angle 1$ and $\angle 2$ form a linear pair	3. given
4. $\angle 1$ and $\angle 2$ are supplementary	4. linear pair postulate
5. $m\angle 1 + m\angle 2 = 180^\circ$	5. def. supplementary
6. $m\angle 1 + m\angle 3 = 180^\circ$	6. substitution
7. $\angle 1$ and $\angle 3$ are supplementary	7. def. supplementary

Given:  $\overline{BE}$  bisects  $\angle ABD$ ;  $\overline{BD}$  bisects  $\angle EBD$

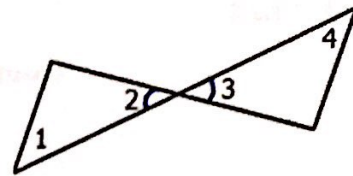
Prove:  $\angle ABE \cong \angle DBC$



Statements	Reasons
1. $\overline{BE}$ bisects $\angle ABD$	1. given
2. $\angle ABE \cong \angle EBD$	2. def. bisect
3. $\overline{BD}$ bisects $\angle EBD$	3. given
4. $\angle EBD \cong \angle DBC$	4. def. bisect
5. $\angle ABE \cong \angle DBC$	5. transitive

Given:  $\angle 1$  and  $\angle 2$  are complementary;  $\angle 3$  and  $\angle 4$  are complementary

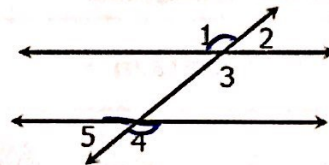
Prove:  $\angle 1 \cong \angle 4$



Statements	Reasons
1. $\angle 1$ and $\angle 2$ are complementary	1. given
2. $\angle 3$ and $\angle 4$ are complementary	2. given
3. $m\angle 1 + m\angle 2 = 90$	3. def. complementary
4. $m\angle 3 + m\angle 4 = 90$	4. def. complementary
5. $\angle 2 \cong \angle 3$	5. def. vertical angles
6. $m\angle 2 = m\angle 3$	6. def. 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
10. $\angle 1 \cong \angle 4$	10. def. congruence

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. linear pair postulate
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. supplementary