Name: ______________________________

Angles Proofs Notes

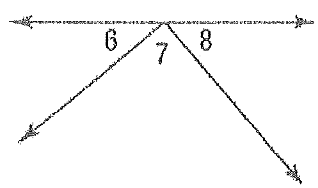
Example 1: Theorem - If two angles are supplementary to the same angle, then they are congruent.

Given: $\angle 3$ and $\angle 4$ are supplementary; $\angle 3$ and $\angle 5$ are supplementary

Prove: $\angle 4 \cong \angle 5$

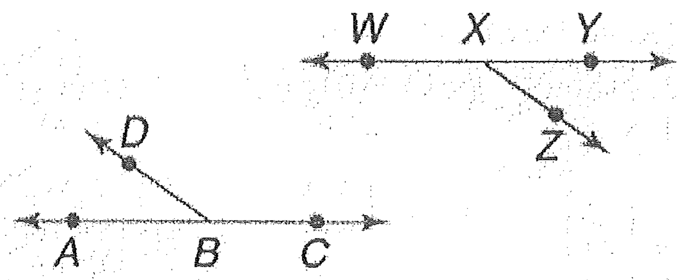
1. <3 and < 4 are supplementary <3 and <5 are supplementary	1. Given
2. ______________________________ ______________________________	2. Definition of Supplementary
3. $\angle 3 + \angle 4 = \angle 3 + \angle 5$	3. ____________________________
4. ______________________________	4. Subtraction

Prove: If <6 and <8 are complementary, the <7 is a right angle.



1. <6 and < 8 are complementary	1. Given
2. ______________________________	2. __________________________
3. ______________________________	3. Definition of Supplementary with Angle Addition
4. ______________________________	4. __________________________
5. ______________________________	5. __________________________
6. ______________________________	6. Definition of a right angle

Given: $\angle ABD \cong \angle YXZ$
Prove: $\angle CBD \cong \angle WXZ$



1. $\angle ABD \cong \angle YXZ$ — 1. Given

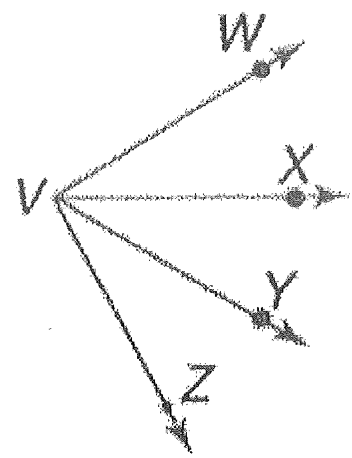
2. ______________________________ ______________________________ — 2. ______________________________

3. $\angle ABD + \angle CBD = \angle YXZ + \angle WXZ$ — 3. ______________________________

4. ______________________________ — 4. ______________________________

5. ______________________________ — 5. ______________________________

Given: $\overrightarrow{VX}$ bisects $\angle WVY$.
$\overrightarrow{VY}$ bisects $\angle XVZ$.
Prove: $\angle WVX \cong \angle YVZ$



1. ______________________________ ______________________________ — 1. ______________________________

2. ______________________________ ______________________________ — 2. ______________________________

3. ______________________________ — 3. ______________________________

Name: Key

Angles Proofs Notes

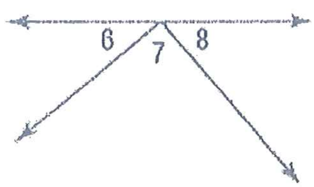
Example 1: Theorem - If two angles are supplementary to the same angle, then they are congruent.

Given: $\angle 3$ and $\angle 4$ are supplementary; $\angle 3$ and $\angle 5$ are supplementary

Prove: $\angle 4 \cong \angle 5$

1. <3 and < 4 are supplementary <3 and <5 are supplementary	1. Given
2. $\angle 3 + \angle 4 = 180^\circ$ $\angle 3 + \angle 5 = 180^\circ$	2. Definition of Supplementary
3. $\angle 3 + \angle 4 = \angle 3 + \angle 5$	3. Substitution
4. $\angle 4 \cong \angle 4$	4. Subtraction

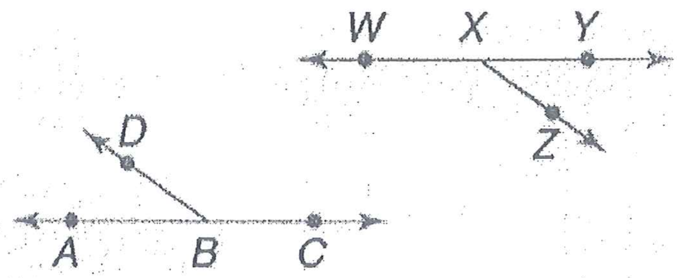
Prove: If <6 and <8 are complementary, the <7 is a right angle.



1. <6 and < 8 are complementary	1. Given
2. $\angle 6 + \angle 8 = 90^\circ$	2. def of compl.
3. $\angle 6 + \angle 7 + \angle 8 = 180^\circ$	3. Definition of Supplementary with Angle Addition
4. $\angle 7 + 90 = 180^\circ$	4. Substitution
5. $\angle 7 = 90^\circ$	5. Subtraction
6. $\angle 7$ is a Right $\angle$	6. Definition of a right angle

Given: $\angle ABD \cong \angle YXZ$

Prove: $\angle CBD \cong \angle WXZ$



1. $\angle ABD \cong \angle YXZ$ — 1. Given

2. <ABD+<DBC=180 — 2. linear pairs are Suppl.

   <YXZ+<ZXW=180

3. $\angle ADB + \angle DBC = \angle YXZ + \angle ZXW$ — 3. Substitution

   <ABD

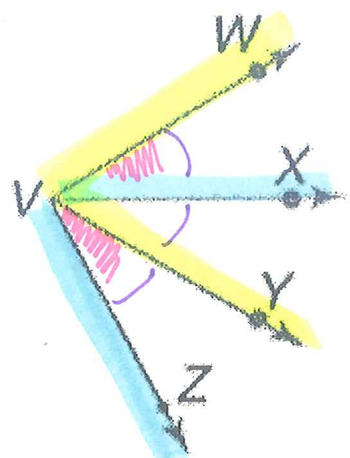
4. <ADB+<DBC=<ADB+<ZXW — 4. Substitution

5. <CBD ≅ <WXZ — 5. Subtraction

Given: $\overrightarrow{VX}$ bisects $\angle WVY$.

$\overrightarrow{VY}$ bisects $\angle XVZ$.

Prove: $\angle WVX \cong \angle YVZ$



1. $\overrightarrow{VX}$ bisect ∠WVY — 1. Given

   $\overrightarrow{VY}$ bisect <XVZ

2. <WVX ≅ <XVY — 2. def of < bisector.

   <XVY ≅ <YVZ

3. <WVX ≅ <YVZ — 3. substitution