What conclusion can you make from the given information?

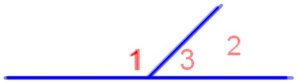
From yesterday.

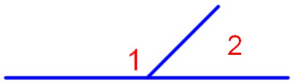
Angle 1 is supplementary to Angle 3.

Angle 2 is supplementary to Angle 3.

$\therefore \angle 1 \cong \angle 2$

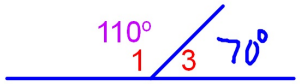
the symbol for "Therefore"....

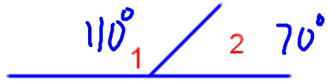




Theorem 2-2 **Congruent Supplements Theorem**

If two angles are supplements of the same angle (or of congruent angles), then the two angles are congruent.





Given:

Angle 1 is supplementary to Angle 3.

Angle 2 is supplementary to Angle 3.

Steps	Reasons
1. Angle 1 is supplementary to Angle 3 Angle 2 is supplementary to Angle 3	1. Given
2. $\angle 1 + \angle 3 = 180°$ $\angle 2 + \angle 3 = 180°$	2. Def of Suppl
3. $\angle 1 + \angle 3 = \angle 2 + \angle 3$	3. Substitution
4. $\angle 1 = \angle 2$	4. Subtr prop =

Given:

Angle 1 is supplementary to Angle 3.

Angle 2 is supplementary to Angle 3.

Steps	Reasons
1. Angle 1 is supplementary to Angle 3 Angle 2 is supplementary to Angle 3	1. Given
2. $\angle 1 + \angle 3 = 180°$ $\angle 2 + \angle 3 = 180°$	2. Definition of Suppl
3. $\angle 1 + \angle 3 = \angle 2 + \angle 3$	3. Substitution
4. $\angle 1 = \angle 2$	4. Subtr Prop of =

This is called a 2-column proof.

Paragraph Proof:

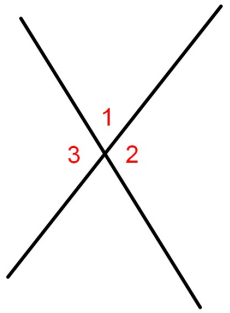
Given the fact $\angle 1$ suppl to $\angle 3$ and $\angle 2$ suppl to $\angle 3$ by the definition of supplementary we know that $\angle 1 + \angle 3 = 180$ and $\angle 2 + \angle 3 = 180$. Using Substitution we get $\angle 1 + \angle 3 = \angle 2 + \angle 3$. Then we can subtract $\angle 3$ from both sides using the Subtraction Property of Equality and get $\angle 1 = \angle 2$.

Given: $\angle 1 \cong \angle 3$

$\therefore \angle 2 \cong \angle 4$

Step	Reason
1. $\angle 1 \cong \angle 3$	1. Given
2. $\angle 1 + \angle 2 \cong 180°$ $\angle 3 + \angle 4 \cong 180°$	2. Angle Add Post
3. $\angle 1 + \angle 2 \cong \angle 3 + \angle 4$	3. Substitution
4. $\angle 1 + \angle 2 \cong \angle 1 + \angle 4$	4. Substitution
5. $\angle 2 \cong \angle 4$	5. Subraction Post of $\cong$

Proving the Vertical Angles Theorem



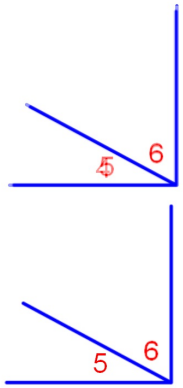
Step	Reason
1. $\angle 1 + \angle 3 \cong 180°$ $\angle 1 + \angle 2 \cong 180°$	1. Angle Add Post
2. $\angle 1 + \angle 3 \cong \angle 1 + \angle 2$	2. Subst.
3. $\angle 3 \cong \angle 2$	3. Subtr. prop =

What conclusion can you make from the given information?

Angle 4 is complementary to Angle 6.

Angle 5 is complementary to Angle 6.

$\therefore \angle 4 \cong \angle 5$



Theorem 2-3	Congruent Complements Theorem
If two angles are complements of the same angle (or of congruent angles), then the two angles are congruent.	

Given:
Angle 4 is complementary to Angle 6.
Angle 5 is complementary to Angle 6.

Steps	Reasons
1. Angle 4 is supplementary to Angle 6 (comp) Angle 5 is supplementary to Angle 6 (comp)	1. Given
2. $\angle 4 + \angle 6 = 90°$ $\angle 5 + \angle 6 = 90°$	2. Def of comp
3. $\angle 4 + \angle 6 = \angle 5 + \angle 6$	3. Substitution
4. $\angle 4 = \angle 5$	4. subtr prop =

What conclusion can you make from the given information?

Angle P is a right angle

Angle Q is a right angle

$\therefore \angle P \cong \angle Q$

Theorem 2-4

All right angles are congruent.

Given: Angle P is a right angle
Angle Q is a right angle

Steps	Reasons
1. Angle P is a right angle Angle Q is a right angle	1. **Given**
2. $\angle P = 90°$ and $\angle Q = 90°$	2. **Def. of Rt. Angle**
3. $\angle P = \angle Q$	3. **Substitution**

Given: Angles G and H are supplementary
Angles G and H are congruent.

$\therefore$

Theorem 2-5

If two angles are congruent and supplementary, then each is a right angle.