Example

Given: $\overline{RONY}$
$\overline{RO} \cong \overline{NY}$

Prove: RN = OY

Looking at this picture, we start off with a line segment and $\overline{RO} \cong \overline{NY}$. I want to prove RN = OY, but I don't have an RN or an OY in the problem. So, I have to ask myself, how can I get them in the problem? If I used the Segment Addition Postulate in the picture, I have RO + ON = RN. That gives am the RN I need.

So, we want to add $\overline{ON}$ to both segments. But we don't have a theorem or postulate that allows us to add segments together – only distances associated with those segments. The other hint that I had to get rid of the segment notation was I had to prove the distances were equal.

	STATEMENTS	REASONS
1.	$\overline{RONY}$, $\overline{RO} \cong \overline{NY}$	Given
2.	RO = NY	Def of Congruence
3.	ON = ON	Reflexive Property
4.	RO+ON= NY+ON	Add Prop Equality
5.	RO+ON = RN ON+NY= OY	Segment Add Postulate
6.	RN = OY	Substitution into step 4