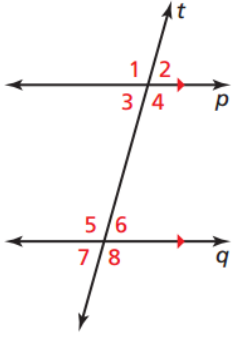


3. **Given:** $p \parallel q$

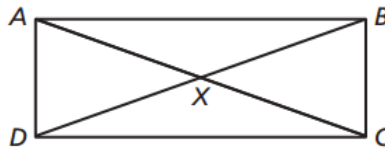
Prove: $\angle 4$ and $\angle 6$ are supplementary



Statements	Reasons
1. $p \parallel q$	1. Given
2. $\angle 2 \cong \angle 6$	2.
3. $m\angle 2 = m\angle 6$	3.
4.	4. linear pair $\rightarrow$ supp
5.	5. supp $\leftrightarrow$ add to 180°
6.	6. substitution prop. =
7.	7. supp $\leftrightarrow$ add to 180°

4. **Given:** $\overline{AX} \cong \overline{DX}$, $\overline{XB} \cong \overline{XC}$

Prove: $\overline{AC} \cong \overline{BD}$



Statements	Reasons
1. $\overline{AX} \cong \overline{DX}$	1. Given
2. $AX = DX$	2.
3. $AX + XC = AC$	3.
4. $DX + XC = AC$	4.
5. $\overline{XB} \cong \overline{XC}$	5.
6. $XB = XC$	6.
7. $DX + XB = AC$	7.
8. $DX + XB = DB$	8.
9. $AC = DB$	9.
10. $\overline{AC} \cong \overline{BD}$	10.