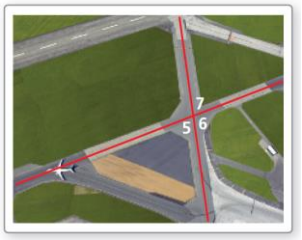
Name _____ Date _____

Prove Angle Pair Relationships Practice Sheet

1) Prove the Vertical Angles Congruence Theorem.



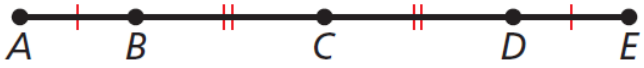
Given: $\angle 5$ and $\angle 7$ are vertical angles

Prove: $\angle 5 \cong \angle 7$

STATEMENTS	REASONS
1)	1)
2)	2)
3)	3)
4)	4)

2) Given: $AB = DE,\ BC = CD$

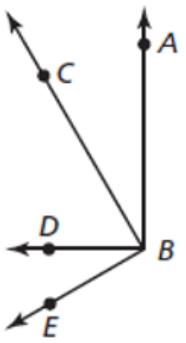
Prove: $\overline{AC} \cong \overline{CE}$



STATEMENTS	REASONS
1)	1)
2)	2)
3)	3)
4)	4)
5)	5)
6)	6)

3) **Given** $\angle ABD$ is a right angle.
$\angle CBE$ is a right angle.

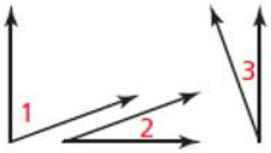
Prove $\angle ABC \cong \angle DBE$



STATEMENTS	REASONS
1. $\angle ABD$ is a right angle. $\angle CBE$ is a right angle.	1. _____
2. $\angle ABC$ and $\angle CBD$ are complementary.	2. Definition of complementary angles
3. $\angle DBE$ and $\angle CBD$ are complementary.	3. _____
4. $\angle ABC \cong \angle DBE$	4. _____

4) **Given** $\angle 1$ and $\angle 2$ are complementary.
$\angle 1$ and $\angle 3$ are complementary.

Prove $\angle 2 \cong \angle 3$



Statements	Reasons

5) **Given** $\angle 1$ and $\angle 2$ are supplementary.
$\angle 3$ and $\angle 4$ are supplementary.
$\angle 1 \cong \angle 4$

Prove $\angle 2 \cong \angle 3$

STATEMENTS	REASONS
1. $\angle 1$ and $\angle 2$ are supplementary. $\angle 3$ and $\angle 4$ are supplementary. $\angle 1 \cong \angle 4$	1. Given
2. $m\angle 1 + m\angle 2 = 180°$, $m\angle 3 + m\angle 4 = 180°$	2. _____
3. _____ $= m\angle 3 + m\angle 4$	3. Transitive Property of Equality
4. $m\angle 1 = m\angle 4$	4. Definition of congruent angles
5. $m\angle 1 + m\angle 2 =$ _____	5. Substitution Property of Equality
6. $m\angle 2 = m\angle 3$	6. _____
7. _____	7. _____