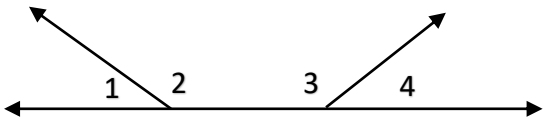
Proving Angles Hw Section 2.4 Part 2

1. Prove theorem 2-6 – Angles supplementary to congruent angles are congruent.

Given ∠1 and ∠2 are supplementary
∠3 and ∠4 are supplementary
∠1 ≅ ∠4

Prove ∠2 ≅ ∠3

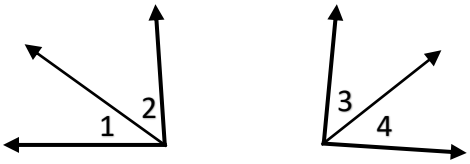


	Statement	Reason
a.	∠1 and ∠2 are supple. ∠3 and ∠4 are supple ∠1 ≅ ∠4	a. Given
b.	$m\angle 1 + m\angle 2 = 180^\circ$ $m\angle 3 + m\angle 4 = 180^\circ$	b. Definition of supplementary
c.	$m\angle 1 = m\angle 4$	c. Def'n of congruent angles
d.	$m\angle 1 + m\angle 2 = m\angle 3 + m\angle 4$	d. Substitution PoE for ℝ
e.	$m\angle 1 + m\angle 2 = m\angle 3 + m\angle 1$	e. Substitution PoE for ℝ
f.	$m\angle 2 = m\angle 3$	f. Subtraction PoE for ℝ
g.	∠2 ≅ ∠3	g. Def'n of congruent angles
h.		h.

2. Prove theorem 2-7 – Angles complementary to congruent angles are congruent.

Given ∠1 and ∠2 are complementary
∠3 and ∠4 are complementary
∠1 ≅ ∠4

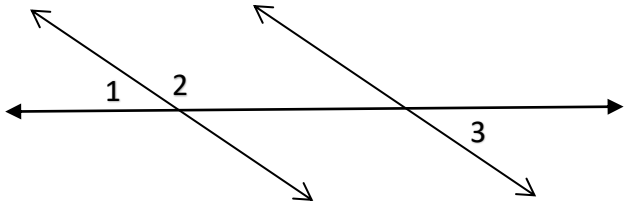
Prove ∠2 ≅ ∠3



	Statement	Reason
a.	∠1 and ∠2 are comple ∠3 and ∠4 are comple ∠1 ≅ ∠4	a. Given
b.	m∠1 + m∠2 = 90° m∠3 + m∠4 = 90°	b. Definition of complementary
c.	m∠1 = m∠4	c. Def'n of congruent angles
d.	m∠1 + m∠2 = m∠3 + m∠4	d. Substitution PoE for ℝ
e.	m∠1 + m∠2 = m∠3 + m∠1	e. Substitution PoE for ℝ
f.	m∠2 = m∠3	f. Subtraction PoE for ℝ
g.	∠2 ≅ ∠3	g. Def'n of congruent angles
h.		h.

3. Given ∠1 and ∠2 form a linear pair
∠2 and ∠3 are supplementary

Prove ∠1 ≅ ∠3

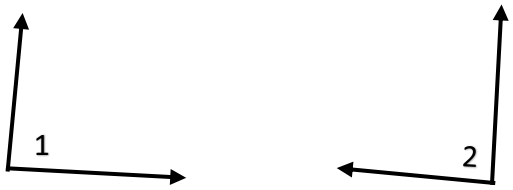


Statement	Reason
a. ∠1 and ∠2 form a linear pair ∠2 and ∠3 are supplementary	a. GIVEN
b. ∠1 and ∠2 are supplementary	b. Supplement Theorem
c. ∠1 ≅ ∠3	c. Angles Supplementary to the same angle are congruent
d.	d.
e.	e.
f.	f.
g.	g.
h.	h.

4. All right angles are congruent.

Given $\angle 1$ and $\angle 2$ are right angles.

Prove $\angle 1 \cong \angle 2$



Statement	Reason
a. $\angle 1$ and $\angle 2$ are right angles	a. GIVEN
b. $m\angle 1 = 90^\circ$ $m\angle 2 = 90^\circ$	b. Def'n of right angle
c. $m\angle 1 = m\angle 2$	c. Substitution PoE for R
d. $\angle 1 \cong \angle 2$	d. Def'n of congruent angles