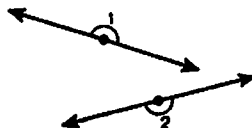Directions: Fill in the blanks with the justifications and steps listed to complete the two-column proof. Use this list to complete the proof.

1) **Given:** ∠1 and ∠2 are straight angles.

   Prove: ∠1 ≅ ∠2

Statements	Reasons
1. ∠1 & ∠2 are straight angles.	1. Given
2. m∠1 = 180°, m∠2 = 180°	2. Def. of a Straight ∠
3. m∠1 = m∠2	3. Subst. Prop. of =
4. ∠1 ≅ ∠2	4. Def. of ≅ ∆

2) **Given:** ∠1 and ∠2 form a linear pair, and ∠3 and ∠4 form a linear pair.

   Prove: m∠1 + m∠2 + m∠3 + m∠4 = 360°
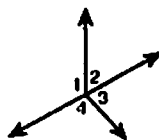
Statements	Reasons
1. ∠1 and ∠2 form a linear pair, and ∠3 and ∠4 form a linear pair.	1. Given
2. ∠1 and ∠2 are supplementary, and ∠3 and ∠4 are supplementary.	2. Linear Pair Theorem
3. m∠1 + m∠2 = 180° m∠3 + m∠4 = 180°	3. Def. of supp. ∆
4. m∠1 + m∠2 + m∠3 + m∠4 = 360°	4. Addition Prop. of Eq.

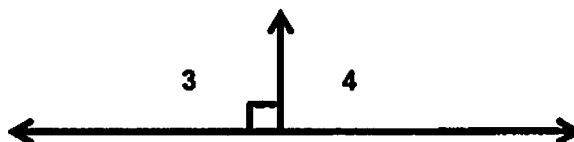3) **Given:** $\overline{AB} \cong \overline{BC}$

       AB = 5

     Prove: BC = 5

Statements	Reasons
1. $\overline{AB} \cong \overline{BC}$	1. Given
2. AB = BC	2. def. of ≅ segs.
3. AB = 5	3. Given
4. 5 = BC	4. Substitution Prop.
5. BC = 5	5. Sym. Prop. of Eq.

4) Given: ∠1 ≅ ∠4
Prove: ∠2 ≅ ∠3
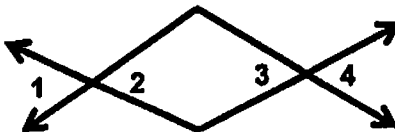
Statements	Reasons
1. ∠1 ≅ ∠4	1. Given
2. ∠1 ≅ ∠2, ∠3 ≅ ∠4	2. Vertical ∠s Theorem
3. ∠2 ≅ ∠4	3. Transitive Prop. of ≅
4. ∠2 ≅ ∠3	4. Transitive Prop. of ≅

5) Given: ∠3 is a right angle.
Prove: ∠4 is a right angle.

Statements	Reasons
1. ∠3 is a right ∠	1. Given
2. m∠3 = 90°	2. Def. of a Rt. ∠
3. ∠3 & ∠4 are supplementary	3. Linear Pair Theorem
4. m∠3 + m∠4 = 180°	4. Def. of supplementary ∠'s
5. 90° + m∠4 = 180°	5. Substitution Prop.
6. m∠4 = 90°	6. Sub. prop. of =
7. ∠4 is a right ∠	7. Def. of right ∠

6) Given: $\overline{AC} \cong \overline{BD}$
Prove: $\overline{AB} \cong \overline{CD}$

Statements	Reasons
1. $\overline{AC} \cong \overline{BD}$	1. Given
2. AC = BD	2. Def. of ≅ segs.
3. AB + BC = AC BC + CD = BD	3. Seg. Add. Post.
4. AB + BC = BC + CD	4. Substit. Prop.
5. AB = CD	5. Sub. Prop. of Eq.
6. $\overline{AB} \cong \overline{CD}$	6. Def. of ≅ Segs.