6) Given: m∠ECD = 140°, m∠ABF = 40°

   Prove: $\overrightarrow{BF} \parallel \overrightarrow{CE}$
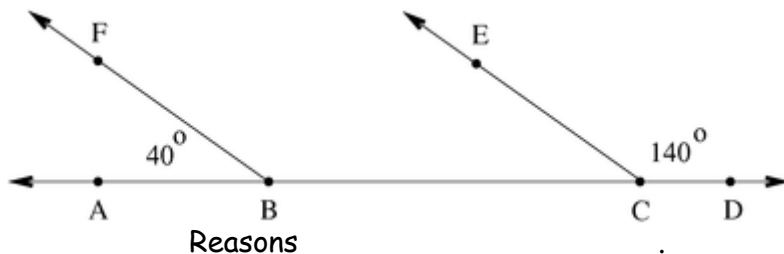

Statements	Reasons
1) m∠ECD = 140°, m∠ABF = 40°	1) Given
2) ‹ABF and ‹FBC are a linear pair	2) Def. of a Linear Pair
3) ‹ABF and ‹FBC are supplementary	3) Linear Pair Postulate
4) m‹ABF + m‹FBC = 180	4) Def. of Supp. Angles
5) 40 + m‹FBC = 180	5) Substitution Prop. Of =
6) m‹FBC = 140	6) Subtraction Prop. Of =
7) m‹FBC = m‹ECD	7) Substitution Prop. Of =
8) ‹FBC ≅ ‹ECD	8) Def. of Congruent Angles
9) $\overrightarrow{BF} \parallel \overrightarrow{CE}$	9) Corresponding Angles Post. Converse

7) Given: r || s, ∠1 ≅ ∠3

   Prove: p || q
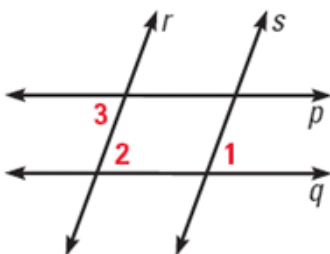
Statements	Reasons
1) r || s, ∠1 ≅ ∠3	1) Given
2) ∠1 ≅ ∠2	2) Corresponding Angles Postulate
3) ∠2 ≅ ∠3	3) Transitive Prop. Of Congruence
4) p || q	4) Alt. Interior Angles thm. Converse

8) Given: $\overline{AB} \parallel \overline{CD}$, ∠1 ≅ ∠3, ∠2 ≅ ∠4

   Prove: $\overline{AD} \parallel \overline{BC}$
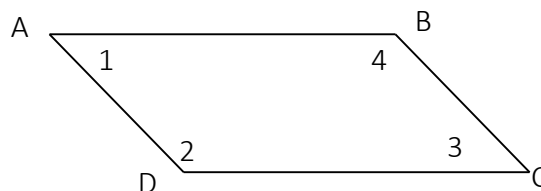
Statements	Reasons
1) $\overline{AB} \parallel \overline{CD}$, ∠1 ≅ ∠3, ∠2 ≅ ∠4	1) Given
2) ‹1 and ‹2 are supplementary	2) Consecutive Int. Angles thm.
3) m‹1 + m‹2 = 180	3) Def. of supplementary angles
4) m‹1 = m‹3	4) Def. of Congruent Angles (from given)
5) m‹3 + m‹2 = 180	5) Substitution Prop. Of =
6) ‹3 and ‹2 are supplementary	6) Def. of supplementary angles
7) $\overline{AD} \parallel \overline{BC}$	7) Consecutive Int. Angles thm. Converse