Geometric Proof Worksheet

- **Geometric proofs are two column proofs of geometry problems that are solved with reasons for each step. The reasons for the properties of Congruence are below:**

Properties of Congruence		
Reflexive	Something is congruent to itself	$a \cong a$
Symmetric	Can flip things	If $a \cong b,$ then $b \cong a$
Transitive	Eliminates the middle man	if $a \cong b$ and $b \cong c,$ then $a \cong c$

- **Segment geometric proofs use the above properties, midpoint definition, and the segment addition postulate to solve problems.**
- **Angle geometric proofs use the above properties, complementary and supplementary definitions, and the vertical angle theorem to solve problems.**

$$E \qquad\qquad F \qquad\qquad\qquad\qquad G \qquad\qquad H$$

Given: EF = GH
Prove: EG $\cong$ FH

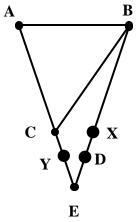| Statement	Reason

Remember, Segment Addition Postulate and Vertical Angles Theorem are the two most important segment and angles postulates or theorems.
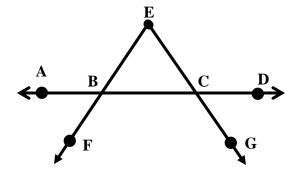
Given: $AC = AB; AB = BX; CY = XD$
Prove: $AY = BD$

Name: _____

Statement	Reason

Given: $\angle EBC \cong \angle ECB$
Prove: $\angle ABF \cong \angle DCG$

Statement	Reason