

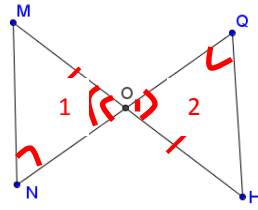
Geometry

Unit One B: Two-Column Proofs #3 – CPCTC (IC17)

Name: \_\_\_\_\_

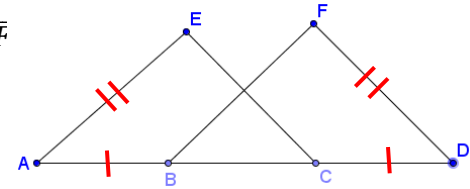
Date: \_\_\_\_\_ Period: \_\_\_\_\_

1. Given: O is the midpoint of  $\overline{MH}$ ;  $\angle N \cong \angle Q$



Prove:  $\overline{MN} \cong \overline{HQ}$

2. Given:  $\overline{AB} \cong \overline{DC}$ ;  $\angle A \cong \angle D$ ;  $\overline{AE} \cong \overline{DF}$



Prove:  $\angle E \cong \angle F$

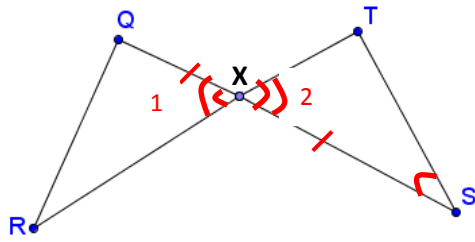
Statements	Reasons
1. O is the midpoint of $\overline{MH}$	1. Given
2. $\overline{MO} \cong \overline{HO}$	2. Def. of midpoint
3. $\angle N \cong \angle Q$	3. Given
4. $\angle 1 \cong \angle 2$	4. Vert. $\angle$ 's thm
5. $\triangle MON \cong \triangle HOQ$	5. AAS
6. $\overline{MN} \cong \overline{HQ}$	6. CPCTC

Statements	Reasons
1. $\overline{AB} \cong \overline{DC}$	1. Given
2. $\overline{AC} \cong \overline{DB}$	2. Overlapping seg. Thm.
3. $\angle A \cong \angle D$	3. Given
4. $\overline{AE} \cong \overline{DF}$	4. Given
5. $\triangle AEC \cong \triangle DFB$	5. SAS
6. $\angle E \cong \angle F$	6. CPCTC

CPCTC stands for: **Corresponding Parts of Congruent Triangles are Congruent**

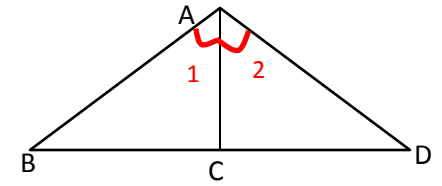
3. Given:  $\angle Q \cong \angle S$ ;  $\overline{RT}$  bisects  $\overline{QS}$

Prove: X is the midpoint of  $\overline{RT}$



4. Given:  $\overline{AC}$  bisects  $\angle BAD$ ;  $\overline{AC} \perp \overline{BD}$

Prove:  $\triangle ABD$  is isosceles with base  $\overline{BD}$



Statements	Reasons
1. $\overline{RT}$ bisects $\overline{QS}$	1. Given
2. $\overline{QX} \cong \overline{SX}$	2. Def. of seg bisector
3. $\angle Q \cong \angle S$	3. Given
4. $\angle 1 \cong \angle 2$	4. Vert. $\angle$ 's thm
5. $\triangle QXR \cong \triangle SXT$	5. ASA
6. $\overline{RX} \cong \overline{TX}$	6. CPCTC
7. X is the midpoint of $\overline{RT}$	7. Def. of midpoint

Statements	Reasons
1. $\overline{AC}$ bisects $\angle BAD$	1. Given
2. $\angle 1 \cong \angle 2$	2. Definition of angle bisector
3. $\overline{AC} \perp \overline{BD}$	3. Given
4. $\angle BCA$ and $\angle DCA$ are right angles	4. Def. of perpendicular
5. $\angle BCA \cong \angle DCA$	5. All right $\angle$ 's are $\cong$
6. $\overline{AC} \cong \overline{AC}$	6. Reflexive Prop
7. $\triangle BAC \cong \triangle DAC$	7. ASA
8. $\overline{BA} \cong \overline{DA}$	8. CPCTC
9. $\triangle ABD$ is isosceles with base $\overline{BD}$	9. Def. of isosceles triangle