

Worksheet # 79

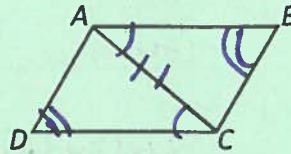
Name _____

Using CPCTC with Triangle Congruence

Period _____

1. Fill in the missing statements and reasons.

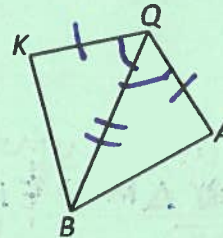
Given: $AB \parallel DC$, $\angle B \cong \angle D$
 Prove: $BC \cong DA$



Statements	Reasons
1. $\overline{AB} \parallel \overline{DC}$	1. Given
2. $\angle BAC \cong \angle DCA$ $\angle B \cong \angle D$	2. <u>AIA</u>
3. _____	3. Given
4. $AC \cong AC$	4. <u>Reflexive Prop.</u>
5. $\triangle ABC \cong \triangle CDA$	5. <u>AAS</u> Congruence Theorem
6. $\overline{BC} \cong \overline{DA}$	6. CPCTC

2. Complete the two-column proof.

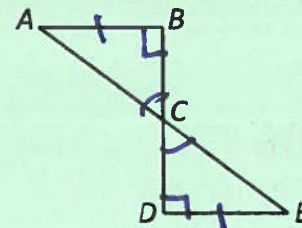
Given: $QK \cong QA$, QB bisects $\angle KQA$
 Prove: $KB \cong AB$



Statements	Reasons
1. $\overline{QK} \cong \overline{QA}$	1. Given
2. QB bisects $\angle KQA$	2. <u>Given</u>
3. $\angle KQB \cong \angle AQB$	3. Definition of Bisector
4. $\overline{QB} \cong \overline{QB}$	4. Reflexive Property of Congruence
5. $\triangle KBQ \cong \triangle ABQ$	5. <u>SAS</u> Congruence Postulate
6. $\overline{KB} \cong \overline{AB}$	6. <u>CPCTC</u>

3. Fill in the missing statements and reasons.

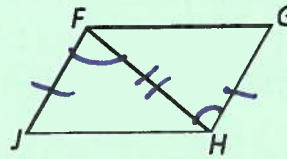
Given: $BD \perp AB$, $BD \perp DE$, $AB \cong DE$
 Prove: $\angle A \cong \angle E$



Statements	Reasons
1. $\overline{BD} \perp \overline{AB}$, $\overline{BD} \perp \overline{DE}$	1. <u>Given</u>
2. $\angle B$ & $\angle D$ are right angles	2. Definition of <u>perpendicular</u>
3. $\angle B \cong \angle D$	3. All <u>Right</u> angles are congruent
4. $\angle BCA \cong \angle ECD$	4. <u>VAT</u>
5. $AB \cong DE$	5. <u>Given</u>
6. $\triangle ABC \cong \triangle EDC$	6. <u>AAS</u> Congruence <u>Thm/Postulate</u>
7. $\angle A \cong \angle E$	7. <u>CPCTC</u>

4. Complete the two-column proof.

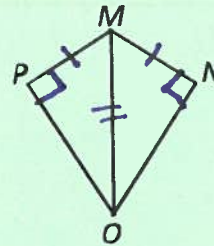
Given: $FJ \cong GH$, $\angle JFH \cong \angle GHF$
 Prove: $FG \cong JH$



Statements	Reasons
1. $FJ \cong GH$	1. Given
2. $\angle JFH \cong \angle GHF$	2. Given
3. $FH \cong HF$	3. Symmetrical / Reflexive
4. $\triangle JFH \cong \triangle GHF$	4. SAS Congruence thm/post.
5. $FG \cong JH$	5. CPCTC

5. Fill in the missing statements and reasons.

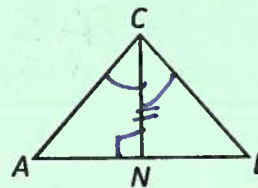
Given: $MN \cong MP$, $MP \perp PO$, $MN \perp NO$
 Prove: $\angle NOM \cong \angle POM$



Statements	Reasons
1. $MP \perp PO$, $MN \perp NO$	1. Given
2. $\angle P$ & $\angle N$ are right angles	2. Definition of Perpendicular
3. $\triangle MPO \cong \triangle MNO$	3. Definition of Right Triangle
4. $MN \cong MP$	4. Given
5. $MO \cong MO$	5. Reflexive Prop.
6. $\triangle MPO \cong \triangle MNO$	6. HL Congruence Thm.
7. $\angle NOM \cong \angle POM$	7. CPCTC

6. Complete the two-column proof.

Given: $CN \perp AB$, CN bisects $\angle ACB$
 Prove: $\triangle ABC$ is an isosceles triangle



Statements	Reasons
1. $CN \perp AB$	1. Given
2. $\angle ANC$ & $\angle BNC$ are right angles	2. Definition of perpendicular
3. $\angle ANC \cong \angle BNC$	3. All right angles are congruent
4. CN bisects $\angle ACB$	4. Given
5. $\angle ACN \cong \angle BCN$	5. Definition of bisector
6. $CN \cong CN$	6. Reflexive Prop
7. $\triangle ANC \cong \triangle BNC$	7. ASA Congruence Postulate
8. $AC \cong BC$	8. CPCTC
9. $\triangle ABC$ is an isos. \triangle	9. Definition of Isosceles Triangle