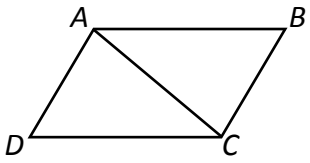
# Worksheet # 79

Name _____

## *Using CPCTC with Triangle Congruence*

Period _____

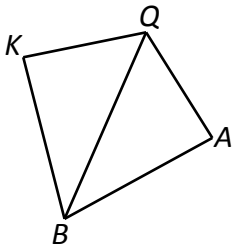
1. Fill in the missing statements and reasons.




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

| Statements | Reasons |
|---|---|
| 1. _____ | 1. Given |
| 2. $\angle BAC \cong \angle DCA$ | 2. _____ |
| 3. _____ | 3. Given |
| 4. $AC \cong AC$ | 4. _____ |
| 5. $\Delta ABC \cong \Delta CDA$ | 5. _____ Congruence Theorem |
| 6. _____ | 6. CPCTC |

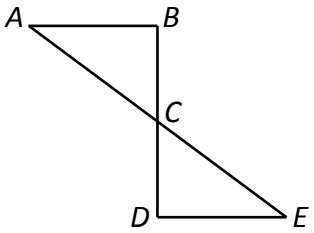
2. Complete the two-column proof.




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

| Statements | Reasons |
|---|---|
| 1. _____ | 1. Given |
| 2. $QB$ bisects $\angle KQA$ | 2. _____ |
| 3. _____ | 3. Definition of Bisector |
| 4. _____ | 4. Reflexive Property of Congruence |
| 5. $\Delta KBQ \cong \Delta$ _____ | 5. _____ Congruence Postulate |
| 6. _____ | 6. _____ |

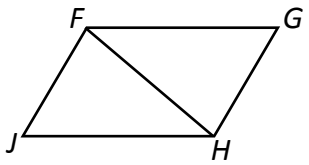
3. Fill in the missing statements and reasons.




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

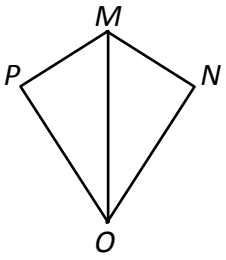
| Statements | Reasons |
|---|---|
| 1. _____ | 1. _____ |
| 2. $\angle B$ & $\angle D$ are right angles | 2. Definition of _____ |
| 3. _____ | 3. All _____ angles are congruent |
| 4. $\angle BCA \cong \angle ECD$ | 4. _____ |
| 5. $AB \cong DE$ | 5. _____ |
| 6. $\Delta ABC \cong \Delta$ _____ | 6. _____ Congruence _____ |
| 7. _____ | 7. _____ |

4. Complete the two-column proof.




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

| Statements | Reasons |
|---|---|
| 1. _____ | 1. _____ |
| 2. $\angle JFH \cong \angle GHF$ | 2. Given |
| 3. $FH \cong HF$ | 3. _____ |
| 4. $\Delta$_____ $\cong \Delta$ _____ | 4. _____ Congruence _____ |
| 5. _____ | 5. _____ |

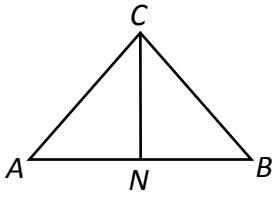



5. Fill in the missing statements and reasons.

**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. _____ |
| 2. _____ | 2. Definition of Perpendicular |
| 3. _____ | 3. Definition of Right Triangle |
| 4. _____ | 4. Given |
| 5. _____ | 5. _____ |
| 6. $\Delta$_____ $\cong \Delta$ _____ | 6. _____ Congruence _____ |
| 7. _____ | 7. _____ |

6. Complete the two-column proof.




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

| Statements | Reasons |
|---|---|
| 1. _____ | 1. _____ |
| 2. $\angle ANC$ & $\angle BNC$ are right angles | 2. Definition of _____ |
| 3. _____ | 3. All right angles are _____ |
| 4. _____ | 4. Given |
| 5. _____ | 5. Definition of _____ |
| 6. _____ | 6. _____ |
| 7. $\Delta ANC \cong \Delta$ _____ | 7. _____ Congruence Postulate |
| 8. $AC \cong$ _____ | 8. _____ |
| 9. _____ | 9. Definition of _____ Triangle |