

NAME \_\_\_\_\_ DATE \_\_\_\_\_ PER. \_\_\_\_\_

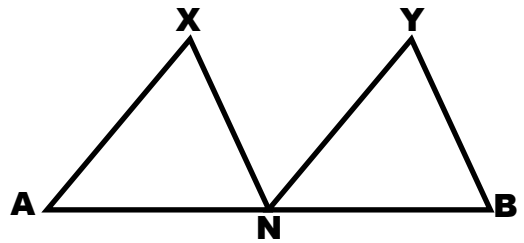
**PROOFS w/CPCTC**

1. GIVEN: N is the midpoint of  $\overline{AB}$

$$\overline{AX} \cong \overline{NY}$$

$$\overline{NX} \cong \overline{BY}$$

PROVE:  $\angle X \cong \angle Y$

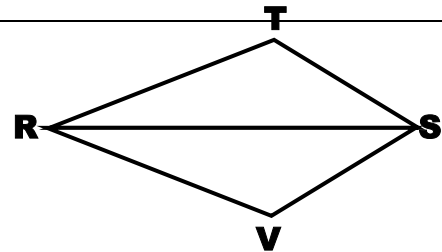


| STATEMENTS                               | REASONS  |
|--|----------|
| 1. N is the midpoint of AB               | 1.       |
| 2.                                       | 2. Given |
| 3. $\overline{NX} \cong \overline{BY}$   | 3.       |
| 4. $\overline{AN} \cong \overline{BN}$   | 4.       |
| 5. $\triangle AXN \cong \triangle$ _____ | 5.       |
| 6.                                       | 6.       |

2. GIVEN:  $\overline{RT} \cong \overline{RV}$

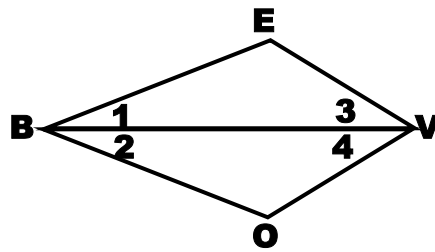
$$\overline{TS} \cong \overline{VS}$$

PROVE:  $\angle RST \cong \angle RSV$



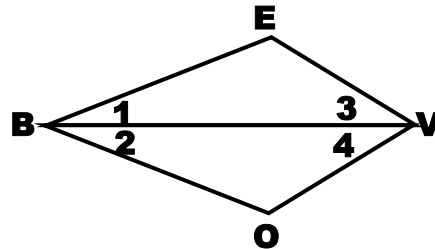
| STATEMENTS                               | REASONS  |
|--|----------|
| 1.                                       | 1. Given |
| 2.                                       | 2. Given |
| 3. $\overline{RS} \cong \overline{RS}$   | 3.       |
| 4. $\triangle RTS \cong \triangle$ _____ | 4.       |
| 5.                                       | 5.       |

3. GIVEN:  $\overrightarrow{BV}$  bisects  $\angle EBO$   
 $\overline{BE} \cong \overline{BO}$   
 PROVE:  $\triangle BEV \cong \triangle BOV$



| STATEMENTS                               | REASONS                     |
|--|-----------------------------|
| 1. BV bisects $\angle EBO$               | 1.                          |
| 2.                                       | 2. Given                    |
| 3.                                       | 3. Definition of A Bisector |
| 4. $\overline{BE} \cong \overline{BO}$   | 4.                          |
| 5. $\triangle BEV \cong \triangle$ _____ | 5.                          |

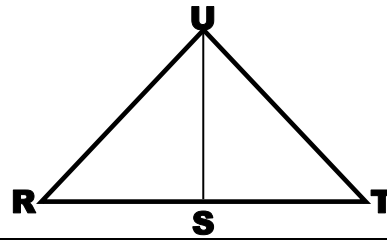
4. GIVEN:  $\overrightarrow{VB}$  bisects  $\angle EVO$   
 $\overrightarrow{BV}$  bisects  $\angle EBO$   
 PROVE:  $\angle E \cong \angle O$



| STATEMENTS                               | REASONS               |
|--|-----------------------|
| 1.                                       | 1. Given              |
| 2.                                       | 2. Given              |
| 3. $\angle 3 \cong \angle 4$             | 3.                    |
| 4. $\angle 1 \cong \angle 2$             | 4.                    |
| 5.                                       | 5. Reflexive Property |
| 6. $\triangle BEV \cong \triangle$ _____ | 6.                    |
| 7.                                       | 7.                    |

5. GIVEN:  $\overline{RT} \perp \overline{US}$ ,  $\overline{RU} \cong \overline{TU}$

PROVE:  $\triangle RSU \cong \triangle TSU$



| STATEMENTS  | REASONS                         |
|---|---------------------------------|
| 1. $\overline{RT} \perp \overline{US}$              | 1.                              |
| 2. $\overline{RU} \cong \overline{TU}$              | 2.                              |
| 3. $\angle USR$ and $\angle UST$ are right angles   | 3.                              |
| 4. $\angle USR$ and $\angle UST$ are right $\angle$ | 4. Definition of right $\angle$ |
| 5.  | 5. Reflexive Property           |
| 6. $\triangle RSU \cong \triangle TSU$              | 6.                              |

|          |  |
|----------|--|
| _____ 6. | <p>What is the inverse of the statement, "If a polygon has 8 sides, then it is an octagon."?</p> <p>A. If a polygon is an octagon, then it has 8 sides.<br/>           B. If a polygon is not an octagon, then it does not have 8 sides.<br/>           C. If an octagon has 8 sides, then it is a polygon.<br/>           D. If a polygon does not have 8 sides, then it is not an octagon.</p>                                       |
| _____ 7. | <p>Lily conjectures that if a number is divisible by 15, then it is also divisible by 9. Which of the following is a counterexample?</p> <p>A. 45<br/>           B. 50<br/>           C. 60<br/>           D. 72</p>   |
| _____ 8. | <p>Which statement is true by the Symmetric Property of Congruence?</p> <p>A. <math>\overline{ST} \cong \overline{ST}</math><br/>           B. <math>15 + MN = MN + 15</math><br/>           C. If <math>\angle P \cong \angle Q</math>, then <math>\angle Q \cong \angle P</math>.<br/>           D. If <math>\angle D \cong \angle E</math> and <math>\angle E \cong \angle F</math>, then <math>\angle D \cong \angle F</math>.</p> |