Geometry CC – Mr. Valentino Name: _____

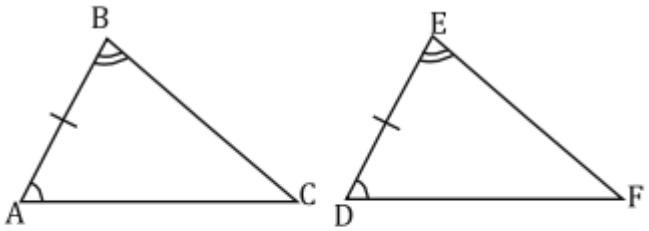
Unit 5 Lesson 5: Fill in the Blank Δ Congruence Date: _____ Period: _____

**Aim: How can we prove triangles are congruent?**

Do Now: Take out your homework from last night! We are going to go over the answers.

## Fill in the Blanks

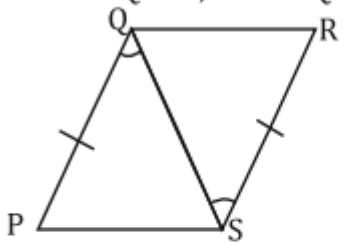
1. Given: $\overline{AB}\cong\overline{DE}$, $\angle B\cong\angle E$, and $\angle A\cong\angle D$




Prove: $\triangle ABC\cong\triangle DBC$

| Statements | Reasons |
|---|---|
| 1. $\overline{AB}\cong\overline{DE}$ | 1. Given |
| 2. | 2.Given |
| 3. $\angle A\cong\angle D$ | 3. |
| 4. $\triangle ABC\cong\triangle DEF$ | 4. |

2. Given: $\overline{PQ}\cong\overline{RS}$, and $\angle PQS\cong\angle RSQ$

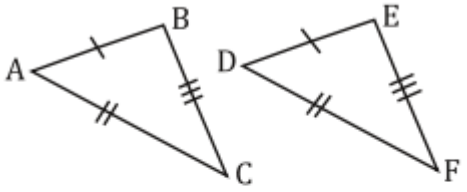



Prove: $\triangle ABC\cong\triangle DBC$

| Statements | Reasons |
|---|---|
| 1. | 1. Given |
| 2. | 2. Given |
| 3. $\overline{QS}\cong\overline{QS}$ | 3. |
| 4. $\triangle PQS\cong\triangle RSQ$ | 4. |

Let's Practice! With a partner, work together to fill in the blanks of each proof.

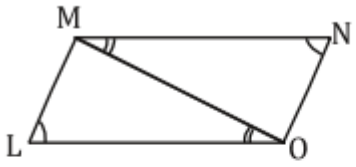
3. Given: $\overline{AB}\cong\overline{DE}$, $\overline{AC}\cong\overline{DF}$, and $\overline{BC}\cong\overline{EF}$




Prove: $\triangle ABD\cong\triangle DEF$

| Statements | Reasons |
|---|---|
| 1. $\overline{AB}\cong\overline{DE}$ | 1. |
| 2. | 2. |
| 3. | 3. |
| 4. | 4. SSS ≅ SSS |

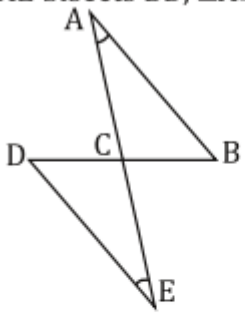
4. Given: $\angle L\cong\angle N$, $\angle LOM\cong\angle NMO$




Prove: $\triangle LMO\cong\triangle NOM$

| Statements | Reasons |
|---|---|
| 1. | 1. |
| 2. | 2. Given |
| 3. | 3. Reflexive Property |
| 4. $\triangle LMO\cong\triangle NOM$ | 4. |

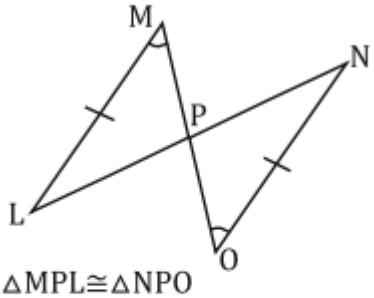
5. Given: $\overline{AE}$ bisects $\overline{BD}$, $\angle A \cong \angle E$




Prove: $\triangle ABC \cong \triangle EDC$

| Statements | Reasons |
|---|---|
| 1. $\angle A \cong \angle E$ | 1. |
| 2. | 2. Given |
| 3. | 3. A segment bisector cuts a segment into 2 ≅ segments |
| 4. $\angle ACB \cong \angle DCE$ | 4. |
| 5. $\triangle ABC \cong \triangle EDC$ | 5. |

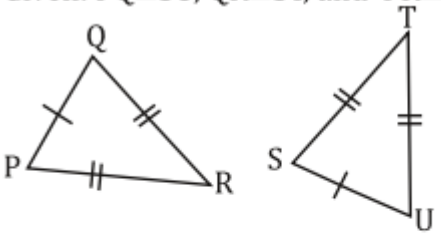
6. Given: $\overline{LM} \cong \overline{NO}$, and $\angle M \cong \angle O$




Prove: $\triangle MPL \cong \triangle NPO$

| Statements | Reasons |
|---|---|
| 1. $\overline{LM} \cong \overline{NO}$ | 1. |
| 2. | 2. Given |
| 3. | 3. |
| 4. | 4. AAS ≅ AAS |

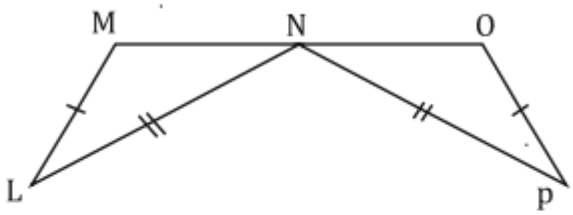
7. Given: $\overline{PQ} \cong \overline{SU}$, $\overline{QR} \cong \overline{ST}$, and $\overline{PR} \cong \overline{TU}$




Prove: $\triangle PQR \cong \triangle UST$

| Statements | Reasons |
|---|---|
| 1. | 1. Given |
| 2. | 2. Given |
| 3. | 3. |
| 4. $\triangle PQR \cong \triangle UST$ | 4. |

8. Given: N is the midpoint of $\overline{MO}$, $\overline{LM} \cong \overline{OP}$, and $\overline{LN} \cong \overline{PN}$




Prove: $\triangle LMN \cong \triangle PON$

| Statements | Reasons |
|---|---|
| 1. $\overline{LM} \cong \overline{OP}$ | 1. Given |
| 2. $\overline{LN} \cong \overline{PN}$ | 2. |
| 3. N is the Midpoint of $\overline{MO}$ | 3. Given |
| 4. | 4. A midpoint divides a segment into 2 ≅ segments |
| 5. | 5. SSS ≅ SSS |