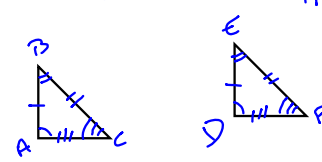


### 4.2 Congruence in Triangles

$\overline{AB} \cong \overline{DE}$   
 same length  
 $\angle A \cong \angle D$   
 same degree  
 In Polygons  
 $\triangle ABC \cong \triangle DEF$

### Corresponding parts

"same spot" if  $\angle A \cong \angle D$



$\angle B \cong \angle E$   
 $\angle C \cong \angle F$   
 $\overline{AB} \cong \overline{DE}$   
 $\overline{BC} \cong \overline{EF}$   
 $\overline{AC} \cong \overline{DF}$   
 then  $\triangle ABC \cong \triangle DEF$

### Biconditional

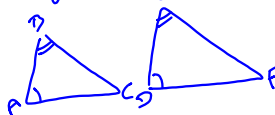
IF  $\triangle ABC \cong \triangle DEF$   
 then corresponding parts of  
 congruent  $\triangle$ 's are congruent

Congruent in Polygons  
 refers to exactly the  
 same shape and size

### Thm 4.3 Third Angle Thm

IF two angles of one triangle  
 are  $\cong$  to two angles of another  
 triangle

then the other angles in the triangles  
 are  $\cong$



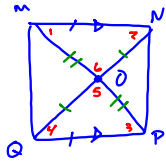
IF  $\angle A \cong \angle D, \angle B \cong \angle E$   
 then  $\angle C \cong \angle F$

### Triangle Properties

Reflexive  $\triangle ABC \cong \triangle ABC$

Symmetric if  $\triangle ABC \cong \triangle DEF, \triangle DEF \cong \triangle ABC$

Transitive  $\triangle ABC \cong \triangle DEF, \triangle DEF \cong \triangle LMN$   
 then  $\triangle ABC \cong \triangle LMN$



Given  $MN \parallel PQ$   
 $\overline{MO} \cong \overline{PO}$   
 $O$  is the midpoint of  
 $MP, NQ$   
 Prove  $\triangle MNO \cong \triangle PQO$

1.  $MN \parallel PQ, \overline{MO} \cong \overline{PO}$
2.  $\angle 1 \cong \angle 3, \angle 2 \cong \angle 4$
3.  $\angle 5 \cong \angle 6$
4.  $\overline{MO} \cong \overline{PO}, \overline{NO} \cong \overline{OQ}$
5.  $\triangle MNO \cong \triangle PQO$

given  
 Alt Int  $\angle$ 's Thm  
 Vertical  $\angle$ 's are  $\cong$   
 Def of midpoint  
 Def of  $\cong \triangle$ 's

## Recognize Patterns

P205 - 207

2 - 32 even