

Name: Key

Date: \_\_\_\_\_

BLOCK/PERIOD: \_\_\_\_\_

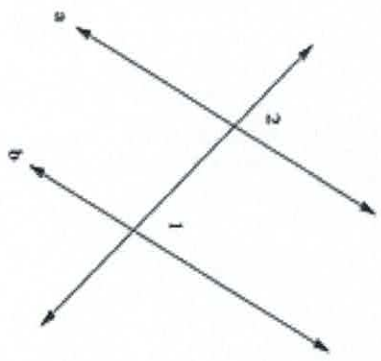
RECALL: Always Mark the given information on the diagram.

(This will help you decide what other information you can use for the proof. As you make new statements, mark them on the diagram.)

Complete the reasons in the following proofs.

Given:  $m\angle 1 = m\angle 2$

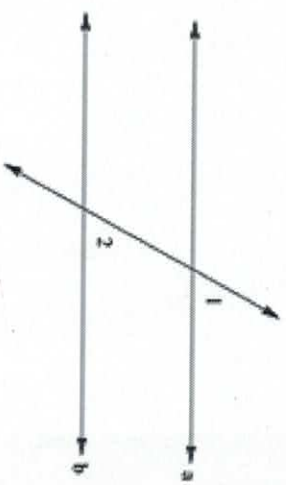
Prove: line  $a \parallel$  line  $b$



Statements	Reasons
1. $m\angle 1 = m\angle 2$	1. Given
2. line $a \parallel$ line $b$	2. Converse of parallel lines thrm.

Given: line  $a \parallel$  line  $b$

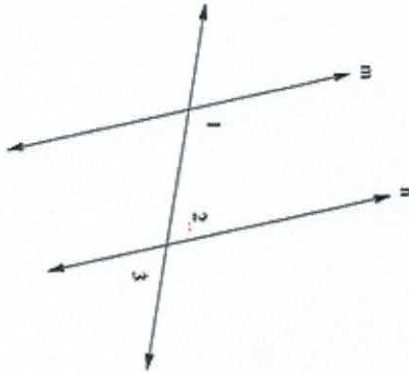
Prove:  $m\angle 1 = m\angle 2$



Statements	Reasons
1. line $a \parallel$ line $b$	1. Given
2. $m\angle 1 = m\angle 2$	2. Parallel lines thrm.

Given:  $\angle 1$  and  $\angle 3$  are supplementary

Prove: line  $m \parallel$  line  $n$



Statements	Reasons
1. $\angle 1$ and $\angle 3$ are supplementary	1. <i>Given</i>
2. $m\angle 1 + m\angle 3 = 180^\circ$	2. <i>Def. of supplementary</i>
3. $m\angle 2 = m\angle 3$	3. <i>Vertical angles</i>
4. $m\angle 1 + m\angle 2 = 180^\circ$	4. <i>Substitution</i>
5. $\angle 1$ and $\angle 2$ are supplementary	5. <i>Def. of supplementary</i>
6. line $m \parallel$ line $n$	6. <i>Conv. of same side int. <math>\angle</math>'s thm.</i>

Given:  $m\angle 1 = 35^\circ$

$m\angle 2 = 145^\circ$



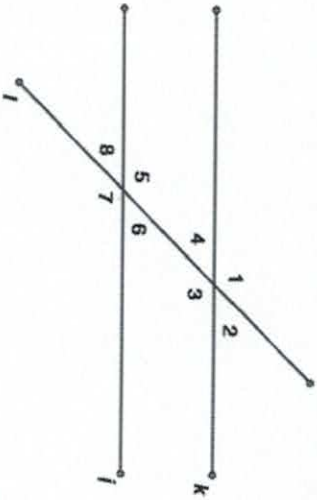
Prove:  $\angle 1$  and  $\angle 2$  are supplementary

Statements	Reasons
1. $m\angle 1 = 35^\circ$	1. <i>Given</i>
2. $m\angle 2 = 145^\circ$	2. <i>Given</i>
3. $m\angle 1 = m\angle 1$	3. <i>Reflexive prop.</i>
4. $m\angle 1 + m\angle 2 = m\angle 1 + m\angle 2$	4. <i>Reflexive prop.</i>
5. $m\angle 1 + m\angle 2 = 35^\circ + 145^\circ$ $m\angle 1 + m\angle 2 = 180^\circ$	5. <i>Substitution</i>
6. $\angle 1$ and $\angle 2$ are supplementary	6. <i>Def. of supplementary</i>

Given: line  $k \parallel$  line  $i$

line  $l$  is a transversal

Prove:  $\angle 1 \cong \angle 7$

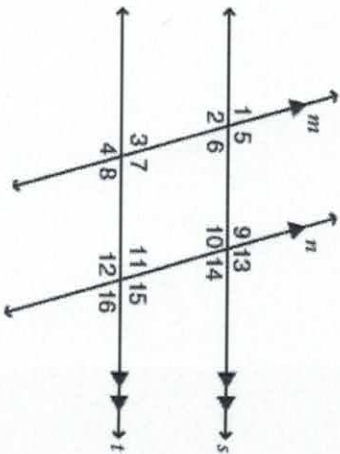


Statements	Reasons
1. line $k \parallel$ line $i$ line $l$ is a transversal	1. Given
2. $\angle 1 \cong \angle 5$	2. Corresponding $\angle$ 's
3. $\angle 5 \cong \angle 7$	3. Vertical Angles
4. $\angle 1 \cong \angle 7$	4. Transitive prop.

Given: line  $m \parallel$  line  $n$

line  $s \parallel$  line  $t$

Prove:  $\angle 1 \cong \angle 16$



Statements	Reasons
1. line $m \parallel$ line $n$ & line $s \parallel$ line $t$	1. Given
2. $\angle 1 \cong \angle 9$	2. Corresponding $\angle$ 's
3. $\angle 9 \cong \angle 11$	3. Vertical Angles
4. $\angle 11 \cong \angle 16$	4. Corresponding $\angle$ 's
5. $\angle 1 \cong \angle 16$	5. Transitive prop.

Given: line ABCD

$$m\angle ECD = 140^\circ$$

$$m\angle ABF = 40^\circ$$



Prove: line BF  $\parallel$  line CE

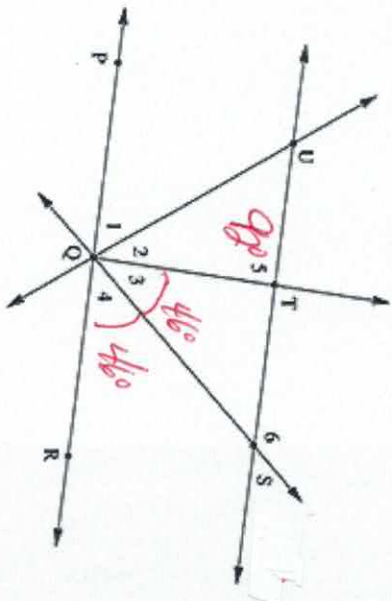
Statements	Reasons
1. line ABCD $m\angle ECD = 140^\circ$ $m\angle ABF = 40^\circ$	1. Given
2. $m\angle ABC = 180^\circ$	2. Definition of Line
3. $m\angle ABC = m\angle ABF + m\angle FBC$	3. Def of linear pair
4. $m\angle ABC = 40^\circ + m\angle FBC$	4. Substitution
5. $m\angle FBC = 140^\circ$	5. Substitution
6. line BF $\parallel$ line CE	6. Converse of

Corresponding Angles Post.

Given:  $m\angle 5 = 92^\circ$

$$m\angle 3 = m\angle 4$$

$$m\angle 4 = 46^\circ$$



Prove: line UTS  $\parallel$  line PQR

Statements	Reasons
1. $m\angle 5 = 92^\circ$ $m\angle 3 = m\angle 4$ $m\angle 4 = 46^\circ$	1. Given
2. $m\angle 3 = 46^\circ$	2. Substitution
3. $m\angle TQR = m\angle 3 + m\angle 4$	3. Def. angle bisector
4. $m\angle TQR = 46^\circ + 46^\circ$ $m\angle TQR = 92^\circ$	4. Substitution
5. line UTS $\parallel$ line PQR	5. Converse of

Corresp. angles