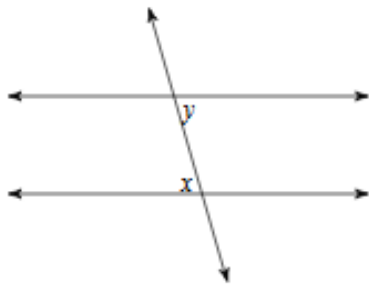


6.4-6.5A Parallel Lines and Transversals Proofs

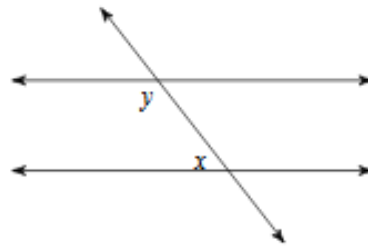
Key

1)



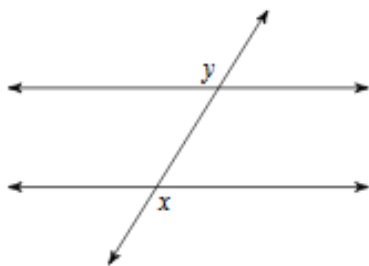
alternate interior

2)



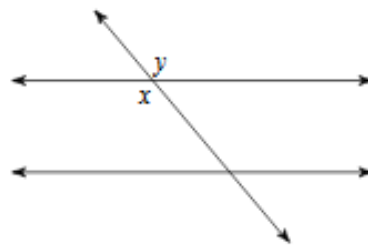
consecutive interior

3)



alternate exterior

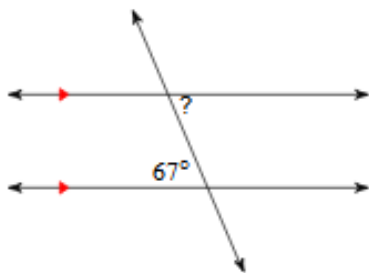
4)



vertical

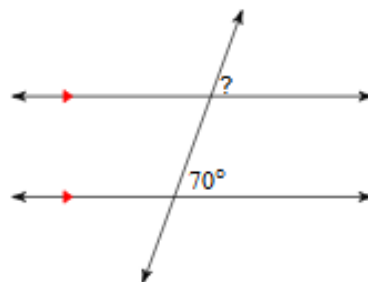
Find the measure of each angle indicated.

5)



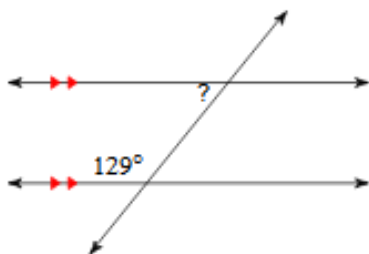
67°

6)



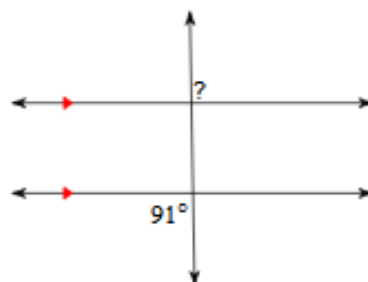
70°

7)



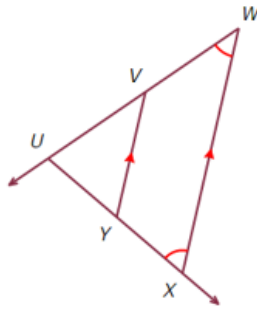
51°

8)



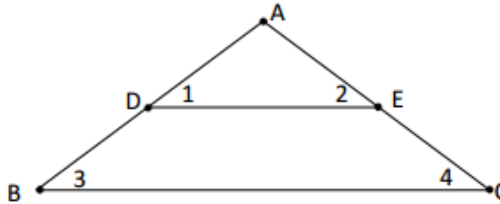
91°

- 9) Given: $\angle WXY \cong \angle W$
 $\overrightarrow{VY} \parallel \overrightarrow{WX}$
 Prove: $\angle UYV \cong \angle UVY$



Statement	Reason
1. $\angle WXY \cong \angle W$	1. Given
2. $\overrightarrow{VY} \parallel \overrightarrow{WX}$	2. Given
3. $\angle WXY \cong \angle UYV$	3. Corresponding Angles are Congruent
4. $\angle W \cong \angle UVY$	4. Corresponding Angles are Congruent
5. $\angle W \cong \angle UYV$	5. Transitive Property of Congruence
6. $\angle UYV \cong \angle UVY$	6. Transitive Property of Congruence

- 10) Given: $m\angle 1 = m\angle 3$
 $m\angle 1 = m\angle 2$
 Prove: $m\angle 3 = m\angle 4$

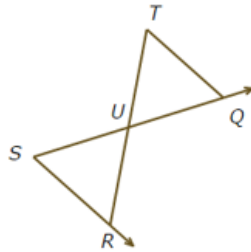


Statement	Reason
1. $m\angle 1 = m\angle 3$	1. Given
2. $m\angle 1 = m\angle 2$	2. Given
3. $m\angle 2 = m\angle 3$	3. Transitive Property of Equality
4. $m\angle 1$ and $m\angle 3$ are corresponding angles	4. Definition of Corresponding Angles
5. $DE \parallel BC$	5. Converse of the Corresponding angle theorem
6. $m\angle 2 = m\angle 4$	6. Corresponding angles are congruent
7. $m\angle 3 = m\angle 4$	7. Transitive Property of Equality

11) Given: $\angle TQU \cong \angle T$

$$\overrightarrow{RS} \parallel \overrightarrow{QT}$$

Prove: $\angle S \cong \angle SRU$

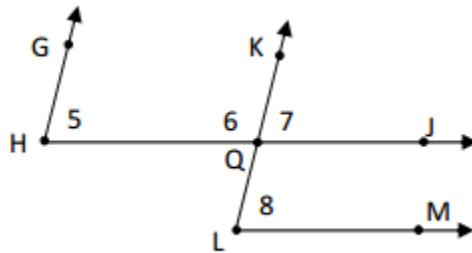


Statement	Reason
1. $\angle TQU \cong \angle T$	1. Given
2. $\overrightarrow{RS} \parallel \overrightarrow{QT}$	2. Given
3. $\angle TQU \cong \angle S$	3. Alternate Interior angles are congruent
4. $\angle SRU \cong \angle T$	4. Alternate Interior angles are congruent
5. $\angle TQU \cong \angle SRU$	5. Transitive Property of Congruence
6. $\angle S \cong \angle SRU$	6. Transitive Property of Congruence

12) Given: $\overline{HJ} \parallel \overline{LM}$

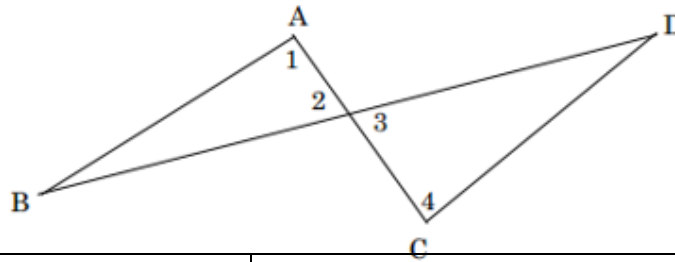
$$\overline{HG} \parallel \overline{LK}$$

Prove: $m\angle 5 = m\angle 8$



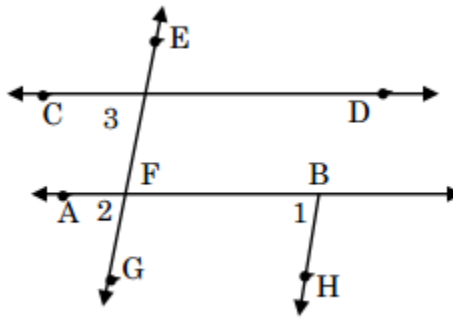
Statement	Reason
1. $\overline{HG} \parallel \overline{LK}$	1. Given
2. $m\angle 5 = m\angle 7$	2. Corresponding Angles are Congruent
3. $\overline{HJ} \parallel \overline{LM}$	3. Given
4. $m\angle 7 = m\angle 8$	4. Corresponding Angles are Congruent
5. $m\angle 5 = m\angle 8$	5. Transitive Property of Equality

- 13) Given: $\angle 1 \cong \angle 2$
 $\angle 3 \cong \angle 4$
 Prove: $\overline{AB} \parallel \overline{CD}$



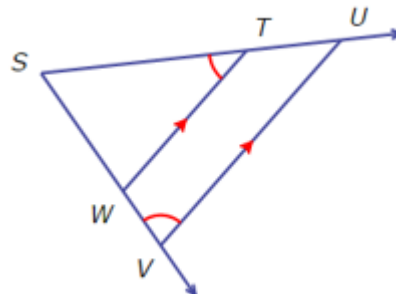
Statement	Reason
1. $\angle 1 \cong \angle 2$	1. Given
2. $\angle 2 \cong \angle 3$	2. Vertical Angles are Congruent
3. $\angle 1 \cong \angle 3$	3. Transitive Property of Congruence
4. $\angle 3 \cong \angle 4$	4. Given
5. $\angle 1 \cong \angle 4$	5. Transitive Property of Congruence
6. $\overline{AB} \parallel \overline{CD}$	6. Converse of Alternate Interior Angles

- 14) Given: $\angle 3 \cong \angle 1$, $\angle 2 \cong \angle 3$
 Prove: $\overline{EG} \parallel \overline{BH}$



Statement	Reason
1. $\angle 3 \cong \angle 1$, $\angle 2 \cong \angle 3$	1. Given
2. $\angle 1 \cong \angle 2$	2. Transitive Property of Congruence
3. $\angle 1$ and $\angle 2$ are Corresponding Angles	3. Definition of Corresponding Angles
4. $\overline{EG} \parallel \overline{BH}$	4. Converse of Corresponding Angles Theorem

- 15) Given: $\angle STW \cong \angle UVW$
 $\overline{TW} \parallel \overline{UV}$
 Prove: $\angle TUV \cong \angle UVW$



Statement	Reason
1. $\angle STW \cong \angle UVW$	1. Given
2. $\overline{TW} \parallel \overline{UV}$	2. Given
3. $\angle TUV \cong \angle STW$	3. Corresponding Angles are Congruent
4. $\angle TUV \cong \angle UVW$	4. Transitive Property of Congruence

