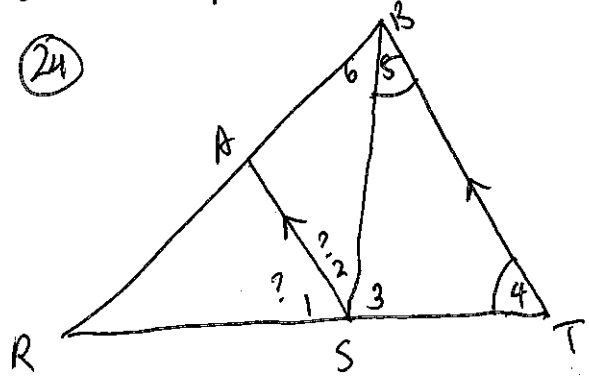


HW#24 Solutions

Orange Book p. 81 #24  
Green Book p. 163 #16, 18

(24)

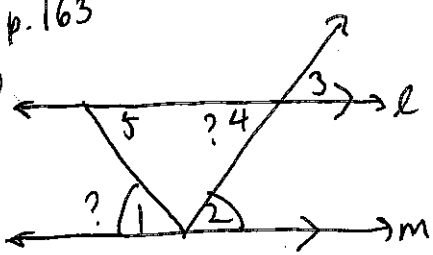


Given:  $\overline{AS} \parallel \overline{BT}$   
 $m\angle 4 = m\angle 5$   
Prove:  $\overrightarrow{SA}$  bisects  $\angle BSR$

Statements	Reasons
1. $\overline{AS} \parallel \overline{BT}$	1. Given.
2. $\angle 5 \cong \angle 2$	2. If two parallel lines are cut by a transversal, then alternate interior angles are congruent. (1)
3. $\angle 4 \cong \angle 1$	3. If two parallel lines are cut by a transversal, then corresponding angles are congruent. (1)
4. $m\angle 4 = m\angle 5$	4. Given.
5. $\angle 4 \cong \angle 5$	5. Def. of congruence. (4)
6. $\angle 1 \cong \angle 5$	6. Transitive Property (3, 5).
7. $\angle 1 \cong \angle 2$	7. Transitive Property (2, 6).
8. $\overrightarrow{SA}$ bisects $\angle BSR$	8. Def. of angle bisector. (7).

GB p. 163

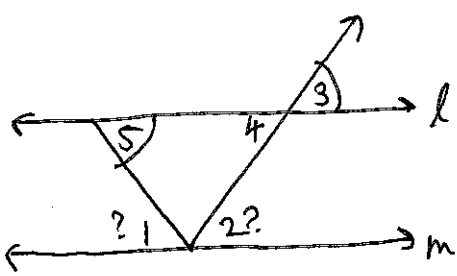
(16)



Given:  $l \parallel m$   
 $\angle 1 \cong \angle 2$   
Prove:  $\angle 1 \cong \angle 4$ .

Statements	Reasons
1. $l \parallel m$	1. Given.
2. $\angle 2 \cong \angle 4$	2. If two parallel lines are cut by a transversal, then alternate interior angles are congruent. (1)
3. $\angle 1 \cong \angle 2$	3. Given.
4. $\angle 1 \cong \angle 4$	4. Transitive Property. (2, 3).

(18)



Given:  $l \parallel m$   
 $\angle 3 \cong \angle 5$   
Prove:  $\angle 1 \cong \angle 2$

Statements	Reasons
1. $l \parallel m$	1. Given.
2. $\angle 1 \cong \angle 5$	2. If two parallel lines are cut by a transversal, then alternate interior angles are congruent. (1)
3. $\angle 3 \cong \angle 5$	3. Given.
4. $\angle 1 \cong \angle 3$	4. Transitive Property. (2, 3).
5. $\angle 2 \cong \angle 3$	5. If two parallel lines are cut by a transversal, then corresponding angles are congruent. (1)
6. $\angle 1 \cong \angle 2$	6. Transitive Property. (4, 5)