

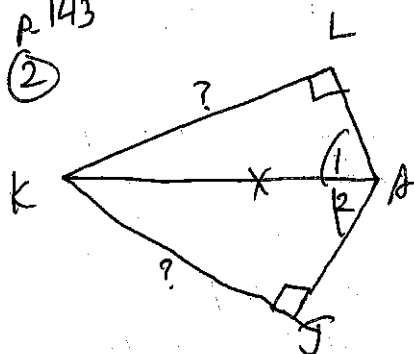
HW #36 Solutions

OB p.143 #2, p.145 #15

GB p.174 #27, 28

p.143

(2)



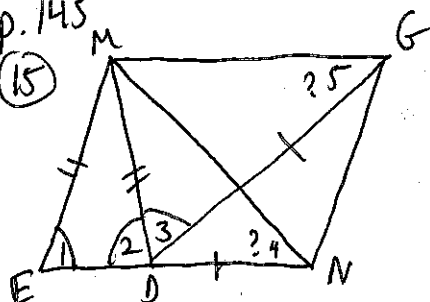
Given: $\overline{KL} \perp \overline{LA}$
 $\overline{KJ} \perp \overline{JA}$
 \overline{AK} bisects $\angle LAJ$

Prove: $\overline{LK} \cong \overline{JK}$

Statements	Reasons
1. \overline{AK} bisects $\angle LAJ$.	1. Given.
2. $\angle 1 \cong \angle 2$ ($a \cong a$)	2. Definition of angle bisector. (1).
3. $\overline{KL} \perp \overline{LA}$, $\overline{KJ} \perp \overline{JA}$	3. Given.
4. $\angle L$ and $\angle J$ are right angles.	4. Definition of perpendicular lines. (3).
5. $\angle L \cong \angle J$ ($a \cong a$)	5. All right angles are congruent. (4).
6. $\overline{KA} \cong \overline{KA}$ ($s \cong s$)	6. Reflexive Property.
7. $\triangle ALK \cong \triangle AJK$	7. AAS Theorem. (2, 5, 6).
8. $\overline{LK} \cong \overline{JK}$	8. Corresponding parts of congruent triangles are congruent. (7).

p.145

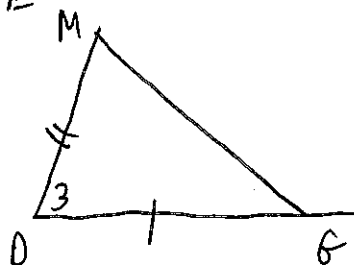
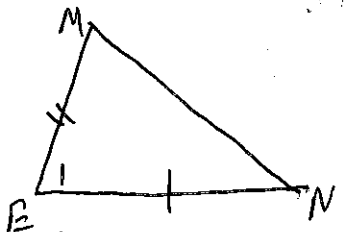
(15)



Given: $\angle 1 \cong \angle 2 \cong \angle 3$
 $\overline{EM} \cong \overline{EN}$

Prove: $\angle 4 \cong \angle 5$

Note: Draw the triangles separately!
 It helps seeing the triangles pulled apart.

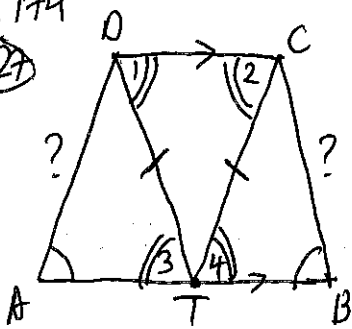


Statements	Reasons
1. $\angle 1 \cong \angle 2 \cong \angle 3$ ($a \cong a$)	1. Given.
2. $\overline{ME} \cong \overline{MG}$ ($s \cong s$)	2. If two angles ($\angle 1$ and $\angle 2$) in a \triangle are congruent, then the sides opposite them are congruent. (1).
3. $\overline{EN} \cong \overline{NG}$ ($s \cong s$)	3. Given.
4. $\triangle MEN \cong \triangle MNG$	4. SAS Postulate. (1, 2, 3).
5. $\angle 4 \cong \angle 5$	5. Corresponding parts of congruent triangles are congruent. (4).

GB:

p. 174

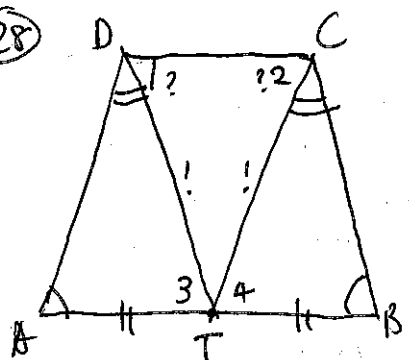
(27)



Given: $\angle A \cong \angle B$
 $\overline{DC} \parallel \overline{AB}$
 $\angle 1 \cong \angle 2$
 Prove: $\overline{AD} \cong \overline{BC}$

Statements	Reasons
1. $\angle A \cong \angle B$ ($a \cong a$)	1. Given.
2. $\angle 1 \cong \angle 2$	2. Given.
3. $\overline{DC} \parallel \overline{AB}$	3. Given.
4. $\angle 1 \cong \angle 3, \angle 2 \cong \angle 4$	4. If two parallel lines are cut by a transversal, then alternate interior angles are congruent. (3).
5. $\angle 3 \cong \angle 4$ ($a \cong a$)	5. Transitive Property. (2, 4).
6. $\overline{DT} \cong \overline{CT}$ ($s \cong s$)	6. If two angles of a triangle are congruent, then the sides opposite them are congruent. (5).
7. $\triangle ATO \cong \triangle BTC$	7. AAS Theorem. (1, 5, 6).
8. $\overline{AD} \cong \overline{BC}$	8. Corresponding parts of congruent triangles are congruent. (7).

(28)



Given: $\angle A \cong \angle B$
 $\angle AOT \cong \angle BOT$
 T is the midpoint of \overline{AB} .
 Prove: $\angle 1 \cong \angle 2$

Statements	Reasons
1. $\angle A \cong \angle B$ ($a \cong a$)	1. Given.
2. $\angle AOT \cong \angle BOT$ ($a \cong a$)	2. Given.
3. T is the midpoint of \overline{AB} .	3. Given.
4. $\overline{AT} \cong \overline{BT}$ ($s \cong s$)	4. Definition of midpoint. (3).
5. $\triangle AOT \cong \triangle BOT$	5. SAS Theorem. (1, 2, 4).
6. $\overline{DT} \cong \overline{CT}$	6. Corresponding parts of congruent triangles are congruent. (5).
7. $\angle 1 \cong \angle 2$	7. If two sides of a triangle are congruent, then the angles opposite them are congruent. (6).