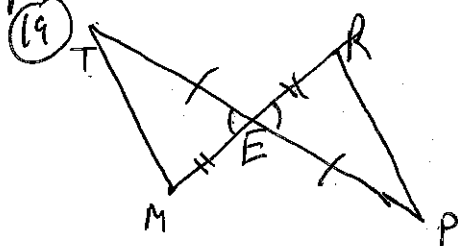


Orange Book p. 126 #19
p. 130 #1, 4, 7, 8

p. 126

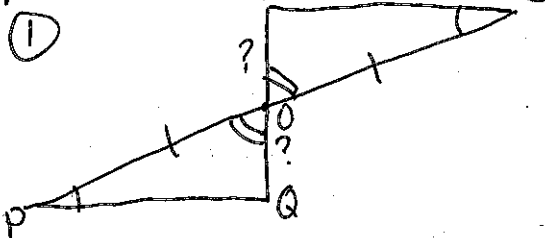


Given: E is the midpoint of \overline{TP}
E is the midpoint of \overline{MR} .

Prove: $\triangle TEM \cong \triangle PER$

Statements	Reasons
1. E is the midpoint of \overline{TP} .	1. Given.
2. $\overline{TE} \cong \overline{PE}$ (s \cong s)	2. Definition of midpoint. (1)
3. $\angle TEM \cong \angle PER$ (a \cong a)	3. Vertical angles are congruent.
4. E is the midpoint of \overline{MR} .	4. Given.
5. $\overline{ME} \cong \overline{RE}$ (s \cong s)	5. Definition of midpoint. (4)
6. $\triangle TEM \cong \triangle PER$	6. SAS Postulate. (2, 3, 5)

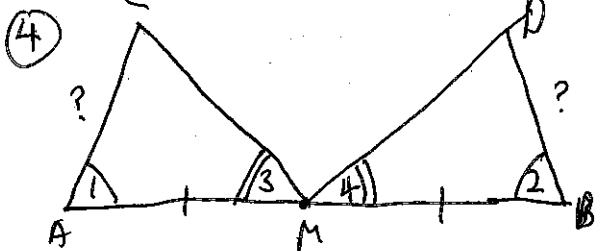
p. 130



Given: $\angle P \cong \angle S$
O is the midpoint of \overline{PS} .

Prove: O is the midpoint of \overline{RQ} .

Statements	Reasons
1. $\angle P \cong \angle S$ (a \cong a)	1. Given.
2. O is the midpoint of \overline{PS} .	2. Given.
3. $\overline{PO} \cong \overline{SO}$ (s \cong s)	3. Definition of midpoint. (2)
4. $\angle ROS \cong \angle QOP$ (a \cong a)	4. Vertical angles are congruent.
5. $\triangle POQ \cong \triangle SOR$	5. ASA Postulate. (1, 3, 4)
6. $\overline{OQ} \cong \overline{OR}$	6. Corresponding parts of congruent triangles are congruent. (5)
7. O is the midpoint of \overline{RQ} .	7. Definition of midpoint. (6)

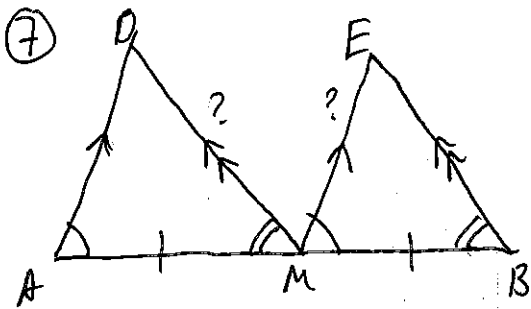


Given: M is the midpoint of \overline{AB} .

$\angle 1 \cong \angle 2$
 $\angle 3 \cong \angle 4$

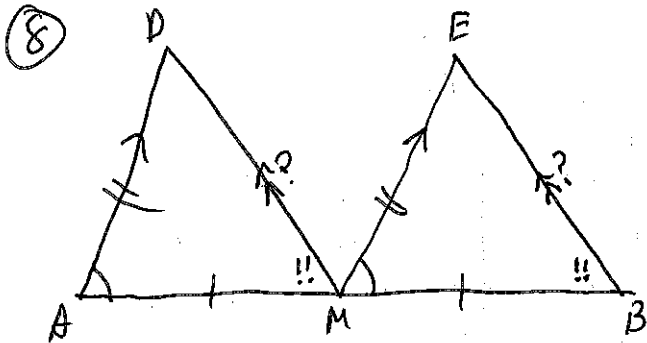
Prove: $\overline{AC} \cong \overline{BD}$

Statements	Reasons
1. $\angle 1 \cong \angle 2$ (a \cong a)	1. Given.
2. M is the midpoint of \overline{AB} .	2. Given.
3. $\overline{AM} \cong \overline{BM}$ (s \cong s)	3. Definition of midpoint. (2)
4. $\angle 3 \cong \angle 4$ (a \cong a)	4. Given.
5. $\triangle ACM \cong \triangle BDM$	5. ASA Postulate. (1, 3, 4)
6. $\overline{AC} \cong \overline{BD}$	6. Corresponding parts of congruent triangles are congruent. (5)



Given: $\overline{AD} \parallel \overline{ME}$
 $\overline{MD} \parallel \overline{BE}$
 M is the midpoint of \overline{AB} .
 Prove: $\overline{MD} \cong \overline{BE}$

Statements	Reasons
1. $\overline{AD} \parallel \overline{ME}$	1. Given.
2. $\angle A \cong \angle EMB$ (a \cong a)	2. If two parallel lines are cut by a transversal, then corresponding angles are congruent. (1).
3. M is the midpoint of \overline{AB} .	3. Given.
4. $\overline{AM} \cong \overline{BM}$ (s \cong s)	4. Definition of midpoint. (3).
5. $\overline{MD} \parallel \overline{BE}$	5. Given.
6. $\angle DMA \cong \angle B$ (a \cong a)	6. Same as step 2. (5).
7. $\triangle ADM \cong \triangle MEB$	7. ASA Postulate. (2, 4, 6).
8. $\overline{MD} \cong \overline{BE}$	8. Corresponding parts of congruent triangles are congruent. (7).



Given: M is the midpoint of \overline{AB}
 $\overline{AD} \cong \overline{ME}$
 $\overline{AD} \parallel \overline{ME}$
 Prove: $\overline{MD} \parallel \overline{BE}$

Statements	Reasons
1. $\overline{AD} \cong \overline{ME}$ (s \cong s)	1. Given.
2. $\overline{AD} \parallel \overline{ME}$	2. Given.
3. $\angle A \cong \angle EMB$ (a \cong a)	3. If two parallel lines are cut by a transversal, then corresponding angles are congruent. (2).
4. M is the midpoint of \overline{AB}	4. Given.
5. $\overline{AM} \cong \overline{MB}$ (s \cong s)	5. Definition of midpoint. (4).
6. $\triangle DAM \cong \triangle EMB$	6. SAS Postulate (1, 3, 5).
7. $\angle DMA \cong \angle EBM$	7. Corresponding parts of congruent triangles are congruent. (6).
8. $\overline{MD} \parallel \overline{BE}$	8. If two lines are cut by a transversal to form congruent corresponding angles, then they are parallel. (7).