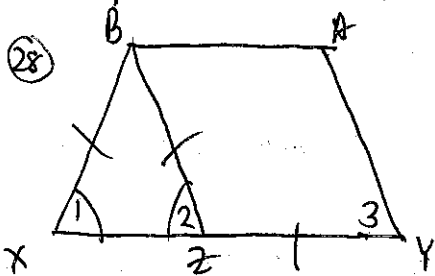


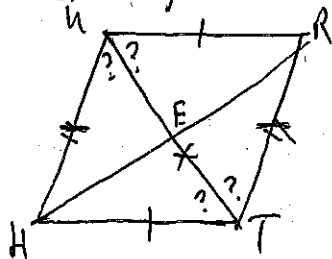
OB p. 188 # 28, 33, 34



Given: $ABZY$ is a parallelogram
 $\overline{ZY} \cong \overline{BX}$
 $\angle 1 \cong \angle 2$
 Prove: $ABZY$ is a rhombus.

Statements	Reasons
1. $ABZY$ is a parallelogram.	1. Given.
2. $\angle 1 \cong \angle 2$	2. Given.
3. $\overline{BX} \cong \overline{BZ}$	3. If two angles of a triangle are congruent, then the sides opposite them are congruent. (2)
4. $\overline{ZY} \cong \overline{BX}$	4. Given.
5. $\overline{ZY} \cong \overline{BZ}$	5. Transitive Property (3, 4).
6. $ABZY$ is a rhombus.	6. If a parallelogram has congruent consecutive sides, then it is a rhombus. (1, 5).

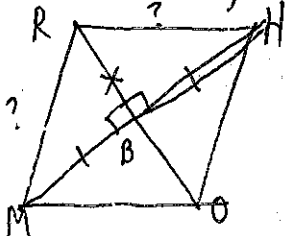
33) Thm: A diagonal of a rhombus bisects two angles of that rhombus.



Given: $URTH$ is a rhombus.
 Prove: \overline{UT} bisects $\angle HUR$,
 \overline{UT} bisects $\angle HTR$.

Statements	Reasons
1. $URTH$ is a rhombus.	1. Given.
2. $\overline{UH} \cong \overline{RT}$, $\overline{UR} \cong \overline{TH}$ (S.S.S.)	2. Opposite sides of a rhombus are congruent. (1)
3. $\overline{UT} \cong \overline{UT}$ (S.S.)	3. Reflexive Property.
4. $\triangle HUT \cong \triangle RTU$	4. SSS Postulate. (2, 3)
5. $\angle HUT \cong \angle RTU$, $\angle RUT \cong \angle HTU$	5. Corresponding parts of congruent triangles are congruent. (4)
6. $\angle HUT \cong \angle HTU$, $\angle RUT \cong \angle RTU$	6. If two sides of a triangle are congruent, then the angles opposite them are congruent. (1)
7. $\angle HUT \cong \angle RUT$, $\angle HTU \cong \angle RTU$	7. Transitive Property. (5, 6).
8. \overline{UT} bisects $\angle HUR$ and $\angle HTR$	8. Def. of angle bisector. (7)

34) Thm: If the diagonals of a parallelogram are perpendicular, then the parallelogram is a rhombus.



Given: $RHOM$ is a parallelogram
 $\overline{RO} \perp \overline{HM}$
 Prove: $RHOM$ is a rhombus.

Statements	Reasons
1. $\overline{RB} \cong \overline{BO}$ (S.S.)	1. Reflexive Property.
2. $\overline{RO} \perp \overline{HM}$	2. Given.
3. $\angle RBM$ and $\angle RBO$ are right \angle 's.	3. Def. of \perp lines. (2)
4. $\angle RBM \cong \angle RBO$ (S.S.A.)	4. All right \angle 's are \cong . (3)
5. $RHOM$ is a parallelogram.	5. Given.
6. \overline{RO} bisects \overline{HM}	6. The diagonals of a parallelogram bisect each other. (5)
7. B is the midpoint of \overline{HM} .	7. Def. of segment bisector. (6)
8. $\overline{BM} \cong \overline{BH}$ (S.S.S.)	8. Def. of midpoint. (7)
9. $\triangle RBM \cong \triangle RBA$	9. SSS Postulate. (1, 4, 8)
10. $\overline{RM} \cong \overline{RH}$	10. Cor. parts of congruent triangles are congruent. (9)
11. $RHOM$ is a rhombus.	11. A parallelogram w/ congruent cons. sides is a rhombus. (10)