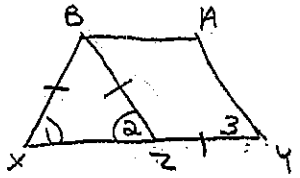
5.4

(28) Given: $\square ABZY$; $\overline{ZY} \cong \overline{BX}$, $\angle 1 \cong \angle 2$

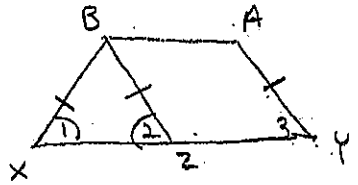
Prove: $ABZY$ is Rhombus



1. $\square ABZY$; $\overline{ZY} \cong \overline{BX}$; $\angle 1 \cong \angle 2$	1. Given
2. $\overline{BX} \cong \overline{BZ}$	2. Converse of Isosc. $\triangle$ Thm.
3. $\overline{ZY} \cong \overline{BZ}$	3. Transitive
4. $ABZY$ is Rhombus	4. 2 consec. sides of $\square \cong \rightarrow$ Rhombus

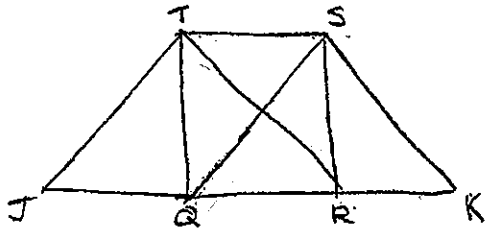
(29) Given: $\square ABZY$; $\overline{AY} \cong \overline{BX}$

Prove: $\angle 1 \cong \angle 2$ & $\angle 1 \cong \angle 3$



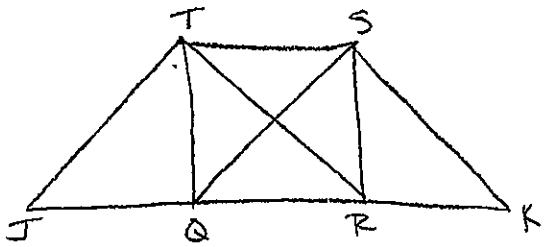
1. $\square ABZY$; $\overline{AY} \cong \overline{BX}$	1. Given.
2. $\overline{BZ} \cong \overline{AY}$	2. Opp. sides $\square \cong$
3. $\overline{BX} \cong \overline{BZ}$	3. Transitive
* 4. $\angle 1 \cong \angle 2$	4. isosc. $\triangle$ Thm.
5. $\overline{BZ} \parallel \overline{AY}$	5. def. $\square$
6. $\angle 2 \cong \angle 3$	6. $\parallel$ lines $\rightarrow$ corr. $\angle$s $\cong$
* 7. $\angle 1 \cong \angle 3$	7. Transitive

(30) Given: Rect. QRST
$\square$RKST
Prove: $\triangle$QSK is isosc.



1. QRST is Rectangle	1. Given
2. $\overline{QS} \cong \overline{RT}$	2. diag. of rect. $\cong$
3. $\square$RKST	3. Given
4. $\overline{RT} \cong \overline{SK}$	4. opp. sides $\square$ $\cong$
5. $\overline{QS} \cong \overline{SK}$	5. Transitive
6. $\triangle$QSK is isosc.	6. def. isosc.

(31) Given: Rect. QRST
$\square$RKST; $\square$JQST
Prove: $\overline{JT} \cong \overline{KS}$



1. Rect. QRST	1. Given
2. $\overline{RT} \cong \overline{QS}$	2. diag. rect. $\cong$
3. $\square$RKST; $\square$JQST	3. Given
4. $\overline{QS} \cong \overline{JT}$; $\overline{RT} \cong \overline{KS}$	4. opp. sides $\square$ $\cong$
5. $\overline{JT} \cong \overline{KS}$	5. Transitive

Geometry Honors
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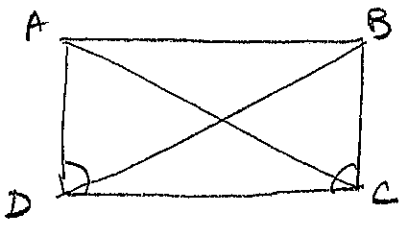
Diagram:



Given: Rect, ABCD

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

Statement	Reason
1. Rect. ABCD	1. Given
2. $\angle ADC$ & $\angle BCD$ rt. $\angle$'s	2. def. rect.
3. $\angle ADC \cong \angle BCD$	3. All rt. $\angle$'s $\cong$
4. Rect. ABCD is $\square$	4. def. rect.
5. $\overline{AD} \cong \overline{BC}$	5. Opp. sides $\square \cong$
6. $\overline{DC} \cong \overline{DC}$	6. Reflexive
7. $\triangle ADC \cong \triangle BCD$	7. SAS
8. $\overline{AC} \cong \overline{BD}$	8. CPCTC

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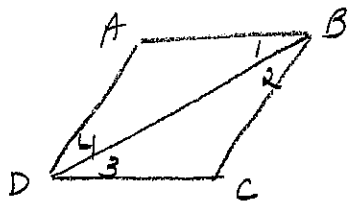
Diagram:

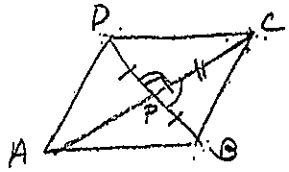


Given: Rhombus ABCD

Prove: $\overline{DB}$ bisects $\angle ABC$ & $\angle ADC$

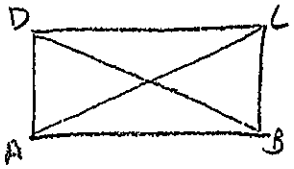
Statement	Reason
1. ABCD is Rhombus	1. Given
2. $\overline{AD} \cong \overline{AB} \cong \overline{BC} \cong \overline{CD}$	2. def. rhombus
3. $\angle 1 \cong \angle 4$; $\angle 2 \cong \angle 3$	3. Isosc. $\triangle$ Thm.
4. ABCD is $\square$	4. def. rhombus
5. $\overline{AB} \parallel \overline{DC}$; $\overline{AD} \parallel \overline{BC}$	5. def. $\square$
6. $\angle 1 \cong \angle 3$; $\angle 2 \cong \angle 4$	6. $\parallel$ lines $\rightarrow$ Alt. int. $\angle$s $\cong$
7. $m\angle 1 = m\angle 4$; $m\angle 2 = m\angle 3$; $m\angle 1 = m\angle 3$; $m\angle 2 = m\angle 4$	7. def. $\cong$
8. $m\angle 4 = m\angle 3$; $m\angle 1 = m\angle 2$	8. subst.
9. $\angle 4 \cong \angle 3$; $\angle 1 \cong \angle 2$	9. def. $\cong$
10. $\overline{DB}$ bisects $\angle ADC$ & $\angle ABC$	10. def. $\angle$ bis.

(34) Given: $\overline{AC} \perp \overline{DB}$; $\square ABCD$
Prove: ABCD is rhombus



1. $\overline{AC} \perp \overline{DB}$; $\square ABCD$	1. Given
2. $\angle CPD \cong \angle CPB$	2. $\perp$ lines $\rightarrow \cong$ adj. $\angle$s
3. $\overline{PC} \cong \overline{PC}$	3. Reflexive
4. $\overline{CA}$ bisects $\overline{DB}$	4. diag. of $\square$ bisect each other
5. P is mdpt. of $\overline{DB}$	5. def. bisect
6. $\overline{DP} \cong \overline{PB}$	6. def. mdpt.
7. $\triangle DPC \cong \triangle BPC$	7. SAS
8. $\overline{CD} \cong \overline{CB}$	8. CPCTC
9. ABCD is rhombus	9. 2 consec. sides of $\square \cong \rightarrow$ rhombus

(35) Given: $\square ABCD$; $\overline{AC} \cong \overline{DB}$
Prove: ABCD is rect.



1. $\square ABCD$; $\overline{AC} \cong \overline{DB}$	1. Given
2. $\overline{AD} \cong \overline{AD}$	2. Reflexive
3. $\overline{DC} \cong \overline{AB}$	3. opp. sides $\square \cong$
4. $\triangle ADC \cong \triangle DAB$	4. SSS
5. $\angle CDA \cong \angle BAD$	5. CPCTC
6. $\overline{DC} \parallel \overline{AB}$	6. def. $\square$
7. $\angle CDA$ is supp. to $\angle BAD$	7. $\parallel$ lines $\rightarrow$ ss int $\angle$s supp.
8. $m\angle CDA + m\angle BAD = 180$	8. def. supp.
9. $m\angle CDA = m\angle BAD$	9. def. $\cong$
10. $m\angle CDA + m\angle CDA = 180$ $2m\angle CDA = 180$	10. subst.
11. $m\angle CDA = 90$	11. div. prop. $=$
12. $\angle CDA$ is rt. $\angle$	12. def. rt. $\angle$
13. ABCD is rect.	13 1 $\angle$ of $\square$ rt. $\angle \rightarrow$ rect.