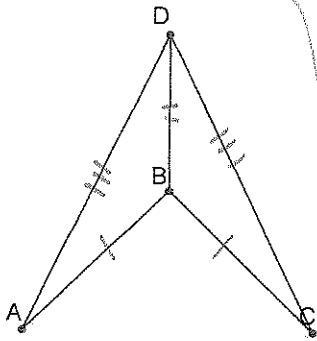


1. Given:  $\overline{AB} \cong \overline{CB}$   
 $\overline{AD} \cong \overline{DC}$   
 Prove:  $\angle A \cong \angle C$

SSS

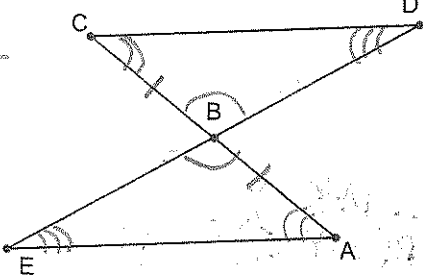


S	J
① $\overline{AB} \cong \overline{CB}$	① GIVEN
② $\overline{AD} \cong \overline{DC}$	② REFLEXIVE PROP.
③ $\triangle ABD \cong \triangle CBD$	③ SSS
④ $\angle A \cong \angle C$	④ CPCTC

LEGEND S = STATEMENTS COLUMN  
 J = JUSTIFICATIONS COLUMN

2. Given  $\overline{CD} \parallel \overline{EA}$   
 $\overline{CB} \cong \overline{BA}$   
 Prove:  $\overline{CA}$  bisects  $\overline{DE}$

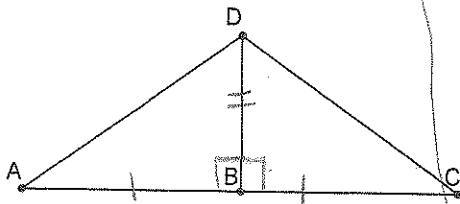
EITHER ASA or AAS



S	J
1. $\overline{CD} \parallel \overline{EA}$	1. GIVEN
S $\overline{CB} \cong \overline{BA}$	
A 2. $\angle C \cong \angle A$	2. IF lines $\parallel$ then alt. int. $\angle$ s are $\cong$
A $\angle D \cong \angle E$	
3. $\triangle CBD \cong \triangle BAE$	3. AAS
4. $\overline{EB} \cong \overline{DB}$	4. CPCTC
5. $\overline{CA}$ bisects $\overline{DE}$	5. DEFN OF SEGMENT BISECTOR

3. Given:  $\overline{DB} \perp \overline{AC}$   
 $\overline{DB}$  bisects  $\overline{AC}$   
 Prove:  $\overline{DB}$  bisects  $\angle ADC$

SAS

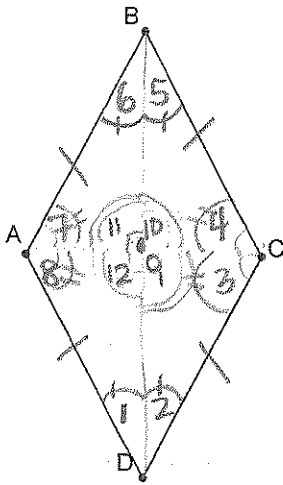


S	J
① $\overline{DB} \perp \overline{AC}$	① GIVEN
$\overline{DB}$ bisects $\overline{AC}$	
S ② $\overline{AB} \cong \overline{CB}$	② DEFN OF SEGMENT BISECTOR
A ③ $m\angle DBA = m\angle DBC = 90^\circ$	③ DEFN OF $\perp$ LINE SEG.
S ④ $\overline{DB} \cong \overline{DB}$	④ REFLEXIVE PROP.
⑤ $\triangle DBA \cong \triangle DBC$	⑤ SAS CONGRUENCE
⑥ $\angle ADB \cong \angle CDB$	⑥ CPCTC
⑦ $\overline{DB}$ bisects $\angle ADC$	⑦ DEFN OF $\angle$ BISECTOR

4. If the figure is a rhombus, then the diagonals are

- A. perpendicular to each other and
- B. bisect the angles of the rhombus

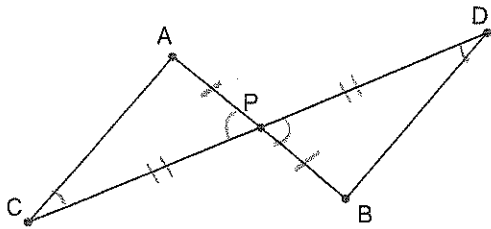
PART A



PART B

- |   |                               |
|---|-------------------------------|
| 1. ABCD IS A RHOMBUS  | 1. GIVEN                      |
| S 2. $\overline{AB} \cong \overline{BC} \cong \overline{CD} \cong \overline{AD}$                                    | 2. DEFIN OF A RHOMBUS         |
| 3. $\triangle ABC \cong \triangle ADC$<br>$\triangle ABD \cong \triangle CBD$<br>ARE ISOSCELES                      | 3. DEFIN OF ISOS. $\triangle$ |
| A 4. $\angle 7 \cong \angle 8$ ; $\angle 5 \cong \angle 6$<br>$\angle 1 \cong \angle 2$ ; $\angle 3 \cong \angle 4$ | 4. DEFIN OF ISOS. $\triangle$ |
| S 5. $AC \cong AC$<br>$BD \cong BD$   | 5. REFLEXIVE PROP.            |
| 6. $\triangle ABC \cong \triangle ADC$ &<br>$\triangle ABD \cong \triangle CBD$                                     | 6. SAS                        |
| 7. $\angle 1 \cong \angle 2$ ; $\angle 7 \cong \angle 8$<br>$\angle 6 \cong \angle 5$ ; $\angle 4 \cong \angle 3$   | 7. CPCTC                      |
| 8. $\angle 9 \cong \angle 10$ ; $\angle 11 \cong \angle 12$   | 8. CPCTC                      |
| 8. $\triangle ABO \cong \triangle CBO \cong$<br>$\triangle CDO \cong \triangle ADO$                                 | 8. SAS                        |
| 9. $\angle 9 \cong \angle 10 \cong \angle 11$<br>$\cong \angle 12$  | 9. CPCTC                      |
| 10. <u>GRRE... MESSY</u><br><u>IMUST REWRITE</u>  | 10.                           |

5. If  $\overline{AB}$  and  $\overline{CD}$  bisect each other at P, then  $\overline{AC} \parallel \overline{BD}$ .



SAS

- |   |  |
|---|--|
| 1. $\overline{AB}$ & $\overline{CD}$ BISECT EACH OTHER @ P                    | 1. GIVEN   |
| 2. $\overline{AP} \cong \overline{BP}$<br>$\overline{CP} \cong \overline{DP}$ | 2. DEFIN OF SEG. BISECTION   |
| 3. $\angle APC \cong \angle BPD$  | 3. VERTICAL $\angle$ S ARE $\cong$                                 |
| 4. $\triangle APC \cong \triangle BPD$  | 4. SAS   |
| 5. $m\angle D = m\angle C$  | 5. CPCTC   |
| 6. $\overline{AC} \parallel \overline{BD}$                                    | 6. If alt. int $\angle$ s are $\cong$ then lines are $\parallel$ . |