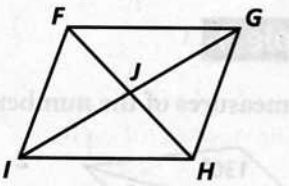
Name _____ Class _____ Date _____

Practice 9-2

Example Exercises

Example 1



1. Complete the following paragraph proof of Theorem 9-5: If the diagonals of a quadrilateral bisect each other, than the quadrilateral is a parallelogram.

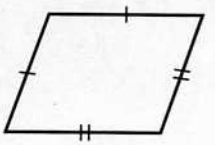
   Given: $\overline{FH}$ and $\overline{GI}$ bisect each other.

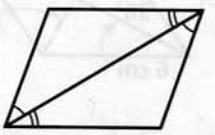
   Prove: *FGHI* is a parallelogram.

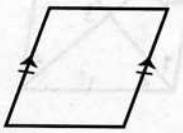
   $\overline{FJ} \cong \overline{JH}$ and $\overline{GJ} \cong \overline{JI}$ by _____. Since vertical angles are congruent, $\angle FJI \cong$ ____ and $\angle FJG \cong$ ____. Therefore $\triangle FJI \cong \triangle HJG$ and $\triangle FJG \cong \triangle HJI$ by the _____ postulate, and $\angle FIJ \cong \angle HGJ$ and $\angle FGJ \cong \angle HIJ$ by _____. Since $\angle FIJ$ and $\angle HGJ$ are both alternate interior angles and congruent, $\overline{FI}$ ____ $\overline{GH}$. $\angle FGJ$ and $\angle HIJ$ are also alternate interior angles and congruent, so $\overline{FG}$ ____ $\overline{IH}$. Therefore *FGHI* is a parallelogram by _____.

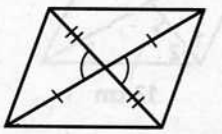
Example 2

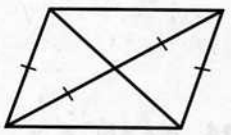
Based on the markings, decide if each figure is a parallelogram. Justify your answer.

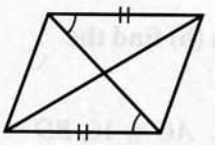
2. 

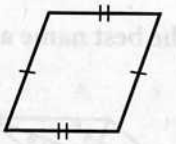
3. 

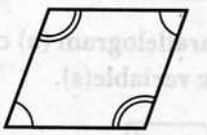
4. 

5. 

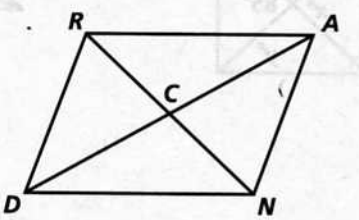
6. 

7. 

8. 

9. 

State whether the information given about quadrilateral *RAND* is sufficient to determine that it is a parallelogram.



10. $\angle RDC \cong \angle NAC, \angle ARC \cong \angle DNC$

11. $\overline{RD} \cong \overline{AN}, \overline{RN} \cong \overline{RA}$

12. $\angle ACN \cong \angle RCD, \angle RCA \cong \angle DCN$

13. $\overline{RD} \cong \overline{AN}, \overline{RA} \cong \overline{DN}$