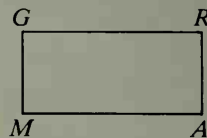
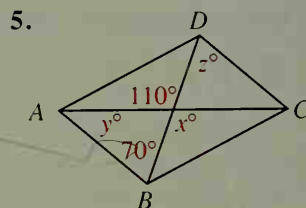
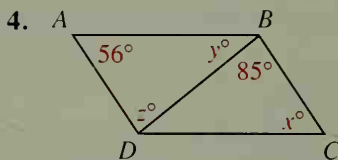
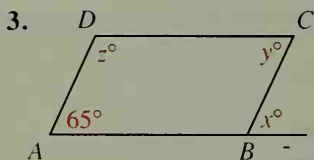


## Classroom Exercises

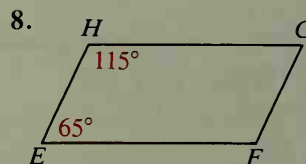
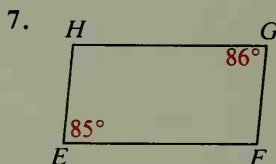
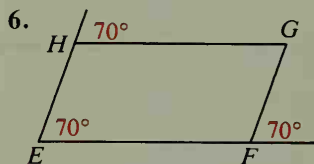
- Quad. *GRAM* is a parallelogram.
  - Why is  $\angle G$  supplementary to  $\angle M$ ?
  - Why is  $\angle M$  supplementary to  $\angle A$ ?
  - Complete: Consecutive angles of a parallelogram are  $\underline{\hspace{1cm}}$ , while opposite angles are  $\underline{\hspace{1cm}}$ .
- Suppose that  $\angle M$  is a right angle. What can you deduce about angles  $G$ ,  $R$ , and  $A$ ?



In Exercises 3–5 quad. *ABCD* is a parallelogram. Find the values of  $x$ ,  $y$ , and  $z$ .



Must quad. *EFGH* be a parallelogram? Can it be a parallelogram? Explain.



Quad. *ABCD* is a parallelogram. Name the principal theorem or definition that justifies the statement.

9.  $\overline{AD} \parallel \overline{BC}$

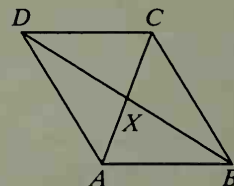
10.  $\angle ADX \cong \angle CBX$

11.  $m\angle ABC = m\angle CDA$

12.  $\overline{AD} \cong \overline{BC}$

13.  $AX = \frac{1}{2}AC$

14.  $DX = BX$



- Draw a quadrilateral that isn't a parallelogram but does have two  $60^\circ$  angles opposite each other.
- State each theorem in if-then form. (Begin "If a quadrilateral is a ....")
  - Theorem 5-1
  - Theorem 5-2
  - Theorem 5-3
- Draw any two segments,  $\overline{AC}$  and  $\overline{BD}$ , that bisect each other at  $O$ . What appears to be true of quad. *ABCD*?
  - This exercise investigates the converse of what theorem?
- Draw two segments that are both parallel and congruent. Connect their endpoints to form a quadrilateral. What appears to be true of the quadrilateral?