

# Practice 5

## Using Deductive Reasoning

Lessons 2-1 through 2-3

In Exercises 1 and 2, underline the hypothesis once and the conclusion twice.

- If  $\overleftrightarrow{AB}$  intersects  $\overleftrightarrow{CD}$  at  $X$ , then  $A$ ,  $X$ , and  $C$  are coplanar.
- I can ride my bicycle if I finish my homework.
- Classify the given statement as true or false. Then write the converse of the statement and classify the converse as true or false.

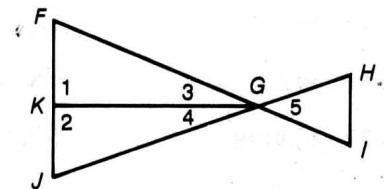
If  $AM = MB$ , then  $M$  is the midpoint of  $\overline{AB}$ . \_\_\_\_\_

Justify each statement with a property of equality or congruence.

- If  $\angle 1 \cong \angle 2$  and  $\angle 2 \cong \angle 3$ , then  $\angle 1 \cong \angle 3$ . \_\_\_\_\_
- $RQ = RQ$  \_\_\_\_\_
- If  $x + y = 7$  and  $y = z$ , then  $x + z = 7$ . \_\_\_\_\_
- If  $m\angle 1 = m\angle 5$ , then  $m\angle 5 = m\angle 1$ . \_\_\_\_\_
- If  $m\angle 1 = m\angle 2$ , then  $m\angle 1 + m\angle 3 = m\angle 2 + m\angle 3$ . \_\_\_\_\_

In Exercises 9–13, name the definition, postulate, or theorem that justifies the statement about the diagram.

- If  $\overrightarrow{GK}$  is the bisector of  $\angle FGJ$ , then  $m\angle 3 = \frac{1}{2}m\angle FGJ$ .



Exs. 9–13

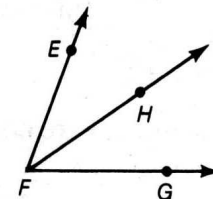
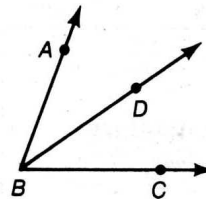
- $FK + KJ = FJ$  \_\_\_\_\_
- $m\angle 1 + m\angle 2 = 180$  \_\_\_\_\_
- If  $K$  is the midpoint of  $\overline{FJ}$ , then  $FK = \frac{1}{2}FJ$ . \_\_\_\_\_
- If  $\angle 3 \cong \angle 4$ , then  $\overrightarrow{GK}$  bisects  $\angle FGJ$ . \_\_\_\_\_

- Complete the proof.

Given:  $\angle ABC \cong \angle EFG$ ;  $\overrightarrow{BD}$  bisects  $\angle ABC$ ;  
 $\overrightarrow{FH}$  bisects  $\angle EFG$ .

Prove:  $\angle DBC \cong \angle HFG$

Proof:



Statements	Reasons
1. $\angle ABC \cong \angle EFG$ or $m\angle ABC = m\angle EFG$	1. _____
2. $\frac{1}{2}m\angle ABC = \frac{1}{2}m\angle EFG$	2. _____
3. $\overrightarrow{BD}$ bisects $\angle ABC$ ; $\overrightarrow{FH}$ bisects $\angle EFG$ .	3. _____
4. $m\angle DBC = \frac{1}{2}m\angle ABC$ ; $m\angle HFG = \frac{1}{2}m\angle EFG$	4. _____
5. $m\angle DBC = m\angle HFG$ or $\angle DBC \cong \angle HFG$	5. _____