

Practice 5

Using Deductive Reasoning

Lessons 2-1 through 2-3

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

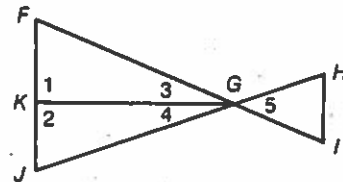
- If \overleftrightarrow{AB} intersects \overleftrightarrow{CD} at X , then $A, X,$ and C are coplanar.
- I can ride my bicycle if I finish my homework.
- Classify the given statement as true or false. Then write the converse of the statement and classify the converse as true or false.

If $AM = MB$, then M is the midpoint of \overline{AB} . F
~~If M is mdpt of \overline{AB} , then $AM = MB$. -T~~

Justify each statement with a property of equality or congruence.

- If $\angle 1 \cong \angle 2$ and $\angle 2 \cong \angle 3$, then $\angle 1 \cong \angle 3$. Trans.
- $RQ = RQ$. Refi.
- If $x + y = 7$ and $y = z$, then $x + z = 7$. Subst.
- If $m\angle 1 = m\angle 5$, then $m\angle 5 = m\angle 1$. Symm.
- If $m\angle 1 = m\angle 2$, then $m\angle 1 + m\angle 3 = m\angle 2 + m\angle 3$. Add. prop.

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



Exs. 9–13

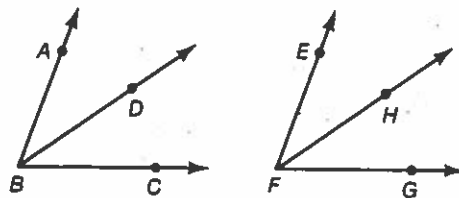
- If \overrightarrow{GK} is the bisector of $\angle FGJ$, then $m\angle 3 = \frac{1}{2}m\angle FGJ$.
 \angle Bis. Thm.
- $FK + KJ = FJ$. Seg. Add'n Post.
- $m\angle 1 + m\angle 2 = 180$. \angle Add'n Post.
- If K is the midpoint of \overline{FJ} , then $FK = \frac{1}{2}FJ$. Midpt. Thm.
- If $\angle 3 \cong \angle 4$, then \overrightarrow{GK} bisects $\angle FGJ$. Def. \angle Bis.

14. 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. <u>Given</u>
2. $\frac{1}{2}m\angle ABC = \frac{1}{2}m\angle EFG$	2. <u>Mult. prop. =</u>
3. \overrightarrow{BD} bisects $\angle ABC$; \overrightarrow{FH} bisects $\angle EFG$.	3. <u>Given</u>
4. $m\angle DBC = \frac{1}{2}m\angle ABC$; $m\angle HFG = \frac{1}{2}m\angle EFG$	4. <u>\angle Bis. Thm.</u>
5. $m\angle DBC = m\angle HFG$ or $\angle DBC \cong \angle HFG$	5. <u>Subst.</u>