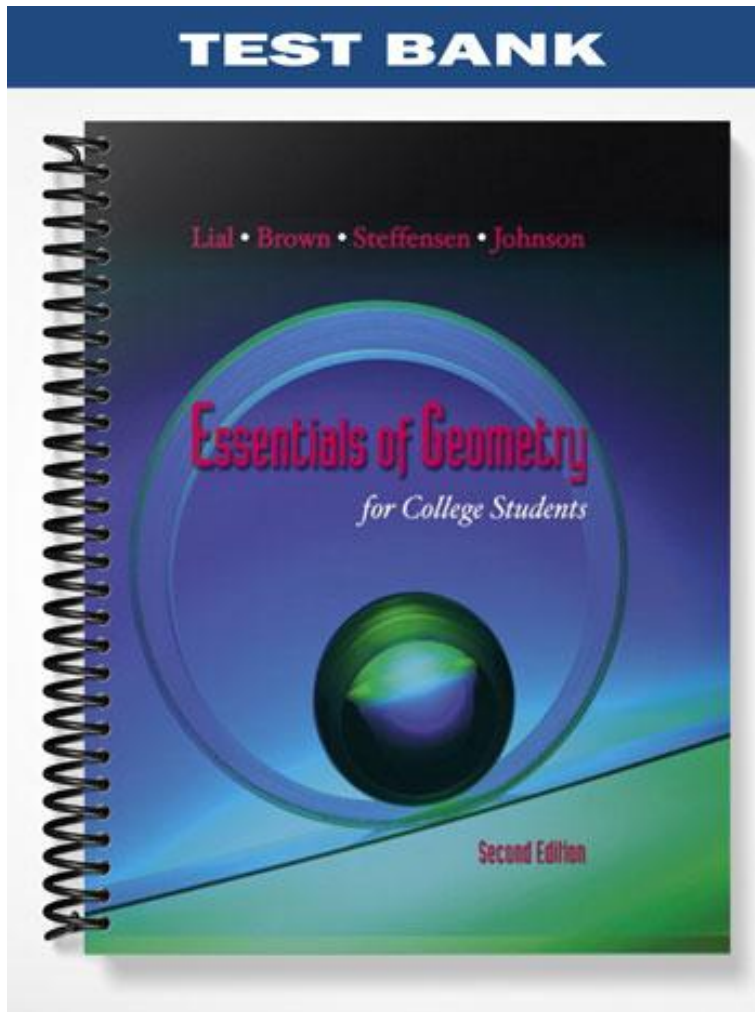


TEST BANK

Lial • Brown • Steffensen • Johnson

Essentials of Geometry
for College Students

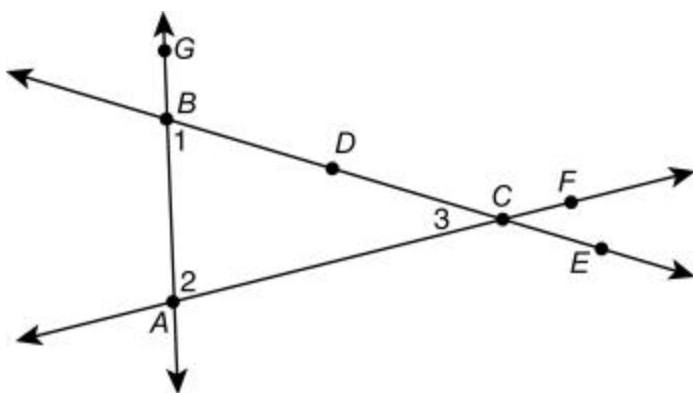
Second Edition



In problems 1-3 determine if the statement is true or false.

- | | |
|---|----------|
| 1. All terms in an axiomatic system can be defined. | 1. _____ |
| 2. Mathematicians use both induction and deduction. | 2. _____ |
| 3. A postulate is the same as a definition. | 3. _____ |

Use the figure to answer true or false in problems 4-9.



- | | |
|---|-----------|
| 4. If $m\angle 1 = 80^\circ$, then $m\angle GBD = 80^\circ$. | 4. _____ |
| 5. $\angle 3$ and $\angle DCF$ are supplementary. | 5. _____ |
| 6. If $m\angle 3 = 35^\circ$, then $m\angle ECF = 35^\circ$. | 6. _____ |
| 7. D is on \overrightarrow{EC} . | 7. _____ |
| 8. $BD + CE = BE$. | 8. _____ |
| 9. C is the vertex of $\angle 3$. | 9. _____ |
| 10. If in the figure above, $DE = 5$ and $CE = 2$, find DC . | 10. _____ |

11. Use inductive reasoning to give the next element in the list 1, 5, 9, 13. **11.** _____

12. How many planes pass through three distinct points not on the same line? **12.** _____

13. Use the transitive law to complete the following: **13.** _____

If $z = w$ and $w = x$, then _____.

14. Find the complement of $82^{\circ}22'$. **14.** _____

15. (a) Does the conclusion below follow logically from the premises? **15.(a)** _____

(b) What type of reasoning is being used?

Premise: Don is a math major.

Premise: Sue is a math major.

Premise: Beth is a math major.

Conclusion: All students are math majors.

(b) _____

16. Give a direct proof of the following theorem.

Premise 1: If you exercise, your health will improve.

Premise 2: If your health improves, you will be able to accomplish more.

Premise 3: If you set aside time, you can exercise.

Theorem: If you set aside time, you will be able to accomplish more.

Proof: STATEMENTS

REASONS

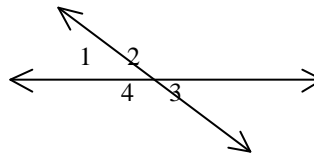
17. Give the converse of the statement, "If it is an orange, then it is a fruit." **17.** _____

18. Give the negation of the statement, "The moon is bright." **18.** _____

19. Give the inverse of the statement, "If it is a pine tree, then it has cones." **19.** _____

20. Give the contrapositive of the statement, "If it is warm, then the car will start." **20.** _____

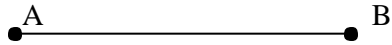
21. *Given:* $\angle 1$ and $\angle 2$ are supplementary
 $\angle 1$ and $\angle 3$ are vertical angles
 $\angle 2$ and $\angle 4$ are vertical angles
Prove: $\angle 3$ and $\angle 4$ are supplementary



<i>Proof:</i>	STATEMENTS	REASONS
1.	$\angle 1$ and $\angle 2$ are supplementary	1. _____
2.	$m\angle 1 + m\angle 2 = 180^\circ$	2. _____
3.	$\angle 1$ and $\angle 3$ are vertical angles	3. _____
4.	$\angle 1 \cong \angle 3$	4. _____
5.	$m\angle 1 = m\angle 3$	5. _____
6.	$\angle 2$ and $\angle 4$ are vertical angles	6. _____
7.	$\angle 2 \cong \angle 4$	7. _____
8.	$m\angle 2 = m\angle 4$	8. _____
9.	$m\angle 3 + m\angle 4 = 180^\circ$	9. _____
10.	$\angle 3$ and $\angle 4$ are supplementary	10. _____

22. Given: Line segment \overline{AB}

Construct: Construct the midpoint of \overline{AB} and label it C . Construct the perpendicular bisector of \overline{AC} .
 Construction:



23. Given: Acute $\angle ABC$ and \overrightarrow{DE}

Construct: $\angle HDE$ such that $m\angle HDE = 2(m\angle ABC)$
 Construction:

