

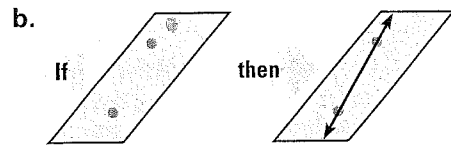
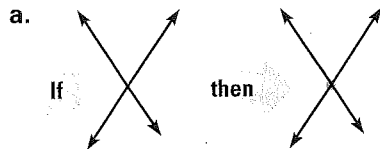
GUIDED PRACTICE

Vocabulary Check ✓

1. The ? of a conditional statement is found by switching the hypothesis and conclusion.

Concept Check ✓

2. State the postulate described in each diagram.



Skill Check ✓

3. Write the hypothesis and conclusion of the statement, "If the dew point equals the air temperature, then it will rain."

In Exercises 4 and 5, write the statement in if-then form.

- When threatened, the African ball python protects itself by coiling into a ball with its head in the middle.
- The measure of a right angle is 90° .
- Write the inverse, converse, and contrapositive of the conditional statement, "If a cactus is of the *cereus* variety, then its flowers open at night."

Decide whether the statement is *true* or *false*. Make a sketch to help you decide.

- Through three noncollinear points there exists exactly one line.
- If a line and a plane intersect, and the line does not lie in the plane, then their intersection is a point.

PRACTICE AND APPLICATIONS

STUDENT HELP

→ **Extra Practice**
to help you master skills is on p. 805.

STUDENT HELP

→ HOMEWORK HELP

- Example 1: Exs. 9–13
- Example 2: Exs. 14–17
- Example 3: Exs. 18–21
- Example 4: Exs. 46–52
- Example 5: Exs. 25–34
- Example 6: Exs. 22–24
- Example 7: Exs. 35–38

REWRITING STATEMENTS Rewrite the conditional statement in if-then form.

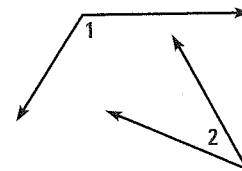
- An object weighs one ton if it weighs 2000 pounds.
- An object weighs 16 ounces if it weighs one pound.
- Three points are collinear if they lie on the same line.
- Blue trunkfish live in the waters of a coral reef.
- Hagfish live in salt water.

ANALYZING STATEMENTS Decide whether the statement is *true* or *false*. If false, provide a counterexample.

- A point may lie in more than one plane.
- If x^4 equals 81, then x must equal 3.
- If it is snowing, then the temperature is below freezing.
- If four points are collinear, then they are coplanar.

WRITING CONVERSES Write the converse of the statement.

18. If $\angle 1$ measures 123° , then $\angle 1$ is obtuse.
19. If $\angle 2$ measures 38° , then $\angle 2$ is acute.
20. I will go to the mall if it is not raining.
21. I will go to the movies if it is raining.



REWRITING POSTULATES Rewrite the postulate in if-then form. Then write the inverse, converse, and contrapositive of the conditional statement.

22. A line contains at least two points.
23. Through any three noncollinear points there exists exactly one plane.
24. A plane contains at least three noncollinear points.

ILLUSTRATING POSTULATES Fill in the blank. Then draw a sketch that helps illustrate your answer.

25. If two lines intersect, then their intersection is ___?___ point(s).
26. Through any ___?___ points there exists exactly one line.
27. If two points lie in a plane, then the ___?___ containing them lies in the plane.
28. If two planes intersect, then their intersection is ___?___.

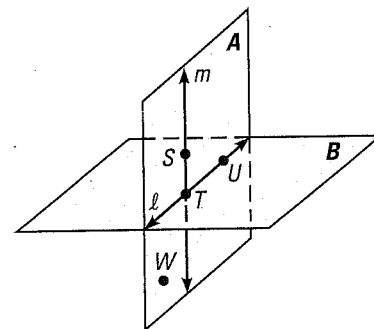
STUDENT HELP



HOMEWORK HELP
Visit our Web site
www.mcdougallittell.com
for help with Exs. 29–34.

LINKING POSTULATES Use the diagram to state the postulate(s) that verifies the truth of the statement.

29. The points U and T lie on line l .
30. Line l contains points U and T .
31. The points W , S , and T lie in plane A .
32. The points S and T lie in plane A .
Therefore, line m lies in plane A .
33. The planes A and B intersect in line l .
34. Lines m and l intersect at point T .



USING POSTULATES In Exercises 35–38, state the postulate that shows that the statement is false.

35. A line contains only one point.
36. Two planes intersect in exactly one point.
37. Three points, A , B , and C , are noncollinear, and two planes, M and N , each contain points A , B , and C .
38. Two points, P and Q , are collinear and two different lines, \overleftrightarrow{RS} and \overleftrightarrow{XY} , each pass through points P and Q .
39. *Writing* Give an example of a true conditional statement with a true converse.