Practice and Problem Solving

= **Step-by-Step Solutions** begin on page R12.
Extra Practice begins on page 815.

Example 1 p. 54

Identify the hypothesis and conclusion of each statement.

14. If a team is playing at home, then they wear their white uniforms.

15. If you are in a grocery store, then you will buy food.

16. If $2n - 7 > 25$, then $n > 16$.

17. If x equals y and y equals z, then x equals z.

18. If it is not raining outside, we will walk the dogs.

19. If you play basketball, then you are tall.

Example 2 p. 55

Identify the hypothesis and conclusion of each statement. Then write each statement in if-then form.

20. Lamar's third-period class is art.

21. Joe will go to the mall after class.

22. For $x = 4$, $6x - 10 = 14$.

23. $5m - 8 < 52$ when $m < 12$.

24. A rectangle with sides of equal length is a square.

25. The sum of two even numbers is an even number.

26. August has 31 days.

27. Science teachers like to conduct experiments.

Example 3 p. 55

Determine whether a valid conclusion follows from the statement below for each given condition. If a valid conclusion does not follow, write *no valid conclusion* and explain why.

If Belinda scores higher than 90% on the exam, then she will receive an A for the course.

28. Belinda scores a 91% on the exam.

29. Belinda scores an 89% on the exam.

30. Belinda receives an A for the course.

31. Belinda receives a B for the course.

Example 4 p. 56

Find a counterexample for each conditional statement.

32. If you live in London, then you live in England.

33. If you attend the banquet, then you will eat the food.

34. If the four sides of a quadrilateral are congruent, then the shape is a square.

35. If a number is divisible by 3, then the number is odd.

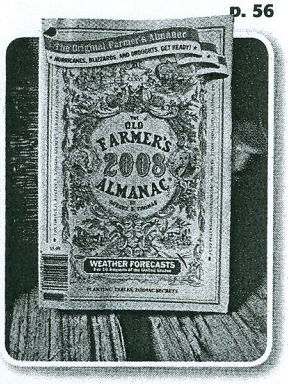
36. If $3x + 17 \leq 53$, then $x < 12$.

37. If $x^2 = 1$, then x must equal 1.

38. If an animal has spots, then it is a Dalmatian.

39. If a number is prime, then it is an odd number.

40. If an animal cannot fly, then the animal is not a bird.



Real-World Link

The Old Farmer's Almanac uses a formula devised in 1792 to predict weather patterns. It claims 80% accuracy in its forecasts.

41. **RESEARCH** Use the Internet or some other resource to research the weather predictions and actual weather for your region for the past five years. Summarize your data as examples and counterexamples.