

Sec 2.1  
Day 2

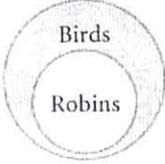
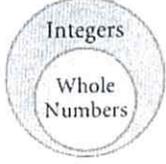
Write the converse of each conditional statement.

23. If you eat your vegetables, then you grow.
24. If a triangle is a right triangle, then it has a  $90^\circ$  angle.
25. If two segments are congruent, then they have the same length.
26. If you do not work, you do not get paid.

Write the converse of each conditional statement. Determine the truth values of the original conditional and its converse.

27. If you travel from the United States to Kenya, then you have a passport.
28. **Coordinate Geometry** If a point is in the first quadrant, then its coordinates are positive.
29. **Chemistry** If a substance is water, then its chemical formula is  $H_2O$ .
30. **Probability** If the probability that an event will occur is 1, then the event is certain to occur.
31. If you are in Indiana, then you are in Indianapolis.
32. If two angles have measure 90, then the angles are congruent.

Write a conditional statement that each Venn diagram illustrates.

33. 
34. 
35. 

36. **Error Analysis** Ellen claims that both this conditional and its converse are true. If  $x$  is an integer divisible by 3, then  $x^2$  is an integer divisible by 3.
  - a. Write the converse of the conditional.
  - b. Only one of the statements is true. Determine which statement is false and provide a counterexample to support your answer.

$x^2$  Algebra Write the converse of each statement. If the converse is true, write *true*; if not true, provide a counterexample.

41. If  $x - 3 = 15$ , then  $x = 18$ .
42. If  $y$  is negative, then  $-y$  is positive.
43. If  $x = -6$ , then  $|x| = 6$ .
44. If  $x < 0$ , then  $x^2 > 0$ .
45. If  $x = 2$ , then  $x^2 = 4$ .
46. If  $x < 0$ , then  $x^3 < 0$ .

47. **Advertising** Al sees an ad that states, "You want to look good at the beach this summer. Join GoodFit Health Club." Al figures, "I am going to join GoodFit Health Club, so that I will look good at the beach."
  - a. Write the statement in the ad as a conditional.
  - b. Write Al's statement as a conditional.
  - c. **Writing** Explain why the statement in the ad does not have the same meaning as Al's statement.

**Reading Math** Let statements  $p$ ,  $q$ , and  $r$  be as follows.

$p$ : A figure is square.

$q$ : A figure has four congruent angles.

$r$ : A figure has four congruent sides.

Write the words for the symbolic statement shown. Determine the truth value of the statement. If it is false, provide a counterexample.

48.  $p \rightarrow q$
49.  $q \rightarrow p$
50.  $r \rightarrow q$
51.  $(q \text{ and } r) \rightarrow p$