

# Practice 69

For use with Section 9-3

Solve.

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|-------------------------|-------------------------|------------------------|
| 1. $(x - 1)(x - 2) = 0$ | 2. $n(n - 5) = 0$       | 3. $3k^2 = 0$          |
| 4. $(a + 1)(a - 1) = 0$ | 5. $(y - 3)(y + 2) = 0$ | 6. $2w(w - 4) = 0$     |
| 7. $3t(t + 6) = 0$      | 8. $7b(b - 9) = 0$      | 9. $-5c(c - 8) = 0$    |
| 10. $z(2z - 7) = 0$     | 11. $6m(3m + 4) = 0$    | 12. $-3v(4v - 18) = 0$ |

In Exercises 13–24, the lengths of the sides of a triangle are given. Is the triangle a right triangle?

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|---------------------------|-------------------------------|-------------------------|
| 13. 2 m, 3 m, 4 m         | 14. 20 mm, 21 mm, 29 mm       | 15. 4 yd, 5 yd, 6 yd    |
| 16. 8 in., 15 in., 17 in. | 17. 4 ft, 7 ft, 8 ft          | 18. 5 cm, 5 cm, 7 cm    |
| 19. 3 m, 5 m, 6 m         | 20. 9 yd, 40 yd, 41 yd        | 21. 5 m, 10 m, 15 m     |
| 22. 2.5 cm, 6 cm, 6.5 cm  | 23. 2.1 in., 2.8 in., 3.5 in. | 24. 3.3 m, 3.5 m, 4.8 m |

Tell whether each statement is *true* or *false*. If it is false, give a counterexample.

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| 25. If you swim, you will get wet.                               | 26. If $x^2 > 16$ , then $x > 4$ .  |
| 27. If you cannot see your shadow, the sun has set.              | 28. If an animal is a bird, then it can fly.                                  |
| 29. If quadrilateral $ABCD$ is a square, then it is a rectangle. | 30. If two sides of a quadrilateral are parallel, then it is a parallelogram. |

For Exercises 31–36, write the converse of the statement and tell whether the converse is *true* or *false*. If it is false, give a counterexample.

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|---|---|
| 31. If $y$ is even, then $y^2$ is even. | 32. If it is raining, then the ground is wet. |
| 33. If $a > 0$ , then $a^2 > 0$ .       | 34. If you are at school, it is not July 4.   |
| 35. If $x = 0$ , then $xy = 0$ .        | 36. $x < 7$ if $x < 5$ .                      |
37. **Open-ended** Draw several triangles with sides  $a$ ,  $b$ , and  $c$ , such that  $c^2 > a^2 + b^2$ . What can you say about the angle opposite side  $c$ ? Draw some triangles in which  $c^2 < a^2 + b^2$ . What seems to be true now about the angle opposite side  $c$ ?