

Setting the four linear factors equal to zero and solving for  $x$  yields:

$$\begin{array}{cccc} x + 2 = 0 & x - 2 = 0 & x + 3 = 0 & x - 3 = 0 \\ x = -2 & x = 2 & x = -3 & x = 3 \end{array}$$

This gives us  $\{\pm 2, \pm 3\}$  as the solution set of the equation.

## 4.R.7 Exercises

### Concept Check

**True/False.** Determine whether each statement is true or false. If a statement is false, explain how it can be changed so the statement will be true. (**Note:** There may be more than one acceptable change.)

1. You should always start by checking the number of terms when factoring a polynomial.
2. If a trinomial is to be factored, the trial-and-error or  $ac$ -methods can be used.
3. If there are four terms in a polynomial, it cannot be factored.

### Practice

Completely factor each of the given polynomials. If a polynomial cannot be factored, write "not factorable."

4.  $x^2 - 100$

5.  $x^2 + 10x + 25$

6.  $x^2 + 16x + 64$

7.  $20x^2 - 21x - 54$

8.  $2y^2 + 6yz + 5y + 15z$

9.  $x^3 + 125$

10.  $a^2 + 2a + 24$

11.  $x^2 + 9x - 36$

12.  $64 + 49t^2$

13.  $4x^2 - 14x + 6$

14.  $200x + 20x^2 - 4x^3$