8.R.2 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. The expression $x^2 + 20x + 100$ is a perfect square trinomial.

2. When factoring polynomials, always look for a common monomial factor first.

3. The sum of two squares, $(x^2 + a^2)$, is factorable.

Practice

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

4. $25 - z^2$

5. $y^2 - 16y + 64$

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

7. $2x^2 - 128$

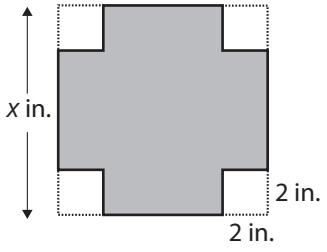
8. $25x^2 + 30x + 9$

9. $9x^2 - y^2$

Solve.

10. a. Represent the area of the shaded region of the square shown as the difference of two squares.

b. Use the factors of the expression in Part **a.** to draw (and label the sides of) a rectangle that has the same area as the shaded region.



Writing & Thinking

11. a. Show that the sum of the areas of the rectangles and squares in the figure is a perfect square trinomial.

b. Rearrange the rectangles and squares in the form of a square and represent its area as the square of a binomial.