Name _____ Date _____

7.7 Practice A

In Exercises 1–3, factor the polynomial.

1. $x^2 - 36$ **2.** $49 - 4t^2$ **3.** $1 - 25y^2$

In Exercises 4–6, use a special product pattern to evaluate the expression.

4. $11^2 - 8^2$ **5.** $17^2 - 15^2$ **6.** $65^2 - 62^2$

In Exercises 7–9, factor the polynomial.

7. $k^2 + 14k + 49$ **8.** $m^2 - 18m + 81$ **9.** $x^2 + 34x + 289$

10. The area (in square centimeters) of a square thank-you card can be represented by $x^2 + 6x + 9$.

a. Write an expression that represents the side length of the card.

b. What is the perimeter of the card when $x = 4$?

In Exercises 11–14, solve the equation.

11. $v^2 - 25 = 0$ **12.** $p^2 + 8p + 16 = 0$

13. $q^2 - 14q + 49 = 0$ **14.** $16x^2 = 25$

In Exercises 15–17, factor the polynomial.

15. $5x^2 - 20$ **16.** $4x^2 - 24x + 36$ **17.** $9x^2 + 90x + 225$

18. While standing on a roof, you drop a hammer. The function $y = 16 - 16t^2$ represents the height y (in feet) of the hammer t seconds after it is dropped. After how many seconds does the hammer land on the ground?

19. Tell whether the polynomial can be factored. If not, change the constant term so that the polynomial is a perfect square trinomial.

a. $p^2 + 12p + 33$ **b.** $x^2 - 16x + 61$

20. A square picture frame has side length x inches. The square opening for a picture within the frame has side length 3 inches.

a. Write a polynomial that represents the area of the picture frame, not including the picture.

b. The area in part (a) is 55 square inches. What is the side length of the picture frame? Explain your reasoning.