Name_____ Date _____

2.7 Practice B

In Exercises 1–3, factor the polynomial.

1. $100 - 49x^2$ **2.** $121s^2 - 25t^2$ **3.** $x^2 - 144y^2$

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

4. $86^2 - 84^2$ **5.** $44^2 - 39^2$ **6.** $28^2 - 27^2$

In Exercises 7–9, factor the polynomial.

7. $z^2 + 26z + 169$ **8.** $16x^2 - 40x + 25$ **9.** $81a^2 + 36a + 4$

10. The area (in square inches) of a square table can be represented by $25x^2 + 40x + 16$.

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

b. Will a square table cloth with side length 60 inches cover the table when $x = 12$?

In Exercises 11–14, solve the equation.

11. $100x^2 = 81$ **12.** $w^2 + 24w + 144 = 0$

13. $s^2 + 81 = 18s$ **14.** $y^2 - \frac{1}{3}y = -\frac{1}{36}$

In Exercises 15–17, factor the polynomial.

15. $8y^2 - 72$ **16.** $7p^2 + 56p + 112$ **17.** $48t^2 - 72t + 27$

18. The function $y = -16t^2 + 24t$ represents the height y (in feet) of a tennis ball bouncing straight up from the ground t seconds after it bounces. After how many seconds does the tennis ball return to 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. $q^2 + \frac{1}{2}q + \frac{1}{3}$ **b.** $4x^2 + 28x + 47$

20. A square picture frame has side length x inches. The square opening for a picture within the frame has side length 6 inches.

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

b. The area in part (a) is 64 square inches. What is the side length of the picture frame? Explain your reasoning.