Name _____ Date _____

Bridge to Algebra 2 Factoring DAY THREE WS

1 - 3: Factor the polynomial.

1. $k^2 + 14k + 49$ **2.** $m^2 - 18m + 81$ **3.** $x^2 + 34x + 289$

4 - 9: Factor the polynomial.

4. $x^2 - 36$ **5.** $m^2 - 49$ **6.** $1 - 25y^2$

7. $5x^2 - 20$ **8.** $4x^2 - 24x + 36$ **9.** $9x^2 + 90x + 225$

Real World Problem: Use appropriate units. Then draw and label a diagram to get a visual.

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 $x = 4$?

11 - 14: Solve the equation.

11. $v^2 - 25 = 0$

12. $p^2 + 8p + 16 = 0$

13. $q^2 - 14q + 49 = 0$

14. $16x^2 = 25$

15 - 16: Real-World Problems. Sketch an image to get a better visual. Use appropriate units.

15. 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?

16. 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.