Name _____ Date _____

Practice 80

For use with Section 10-5

Expand each expression.

1. $x(x + 5)$ **2.** $x(x - 12)$ **3.** $-x(x - 3)$

4. $2x(x - 10)$ **5.** $-6x(x + 7)$ **6.** $9x(2 - x)$

7. $3x(4x + 5)$ **8.** $7x(8 - 3x)$ **9.** $-2x(4x - 11)$

10. $5x^2(x + 3)$ **11.** $-4x^2(5 - 6x)$ **12.** $-5x(x^3 + 2)$

For Exercises 13–24,

a. **factor one side of each equation completely.**

b. **find the *x*-intercepts and *y*-intercept of the graph of each equation.**

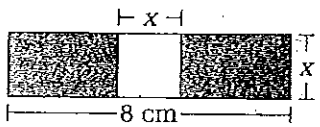
13. $y = x^2 + 3x$ **14.** $y = x^2 - 15x$ **15.** $y = x^2 + x$

16. $y = -x^2 - 6x$ **17.** $y = -x^2 + 7x$ **18.** $y = x - 4x^2$

19. $y = 2x^2 + 5x$ **20.** $y = -8x^2 + x$ **21.** $y = 10x^2 - 3x$

22. $y = 3x^2 - 6x$ **23.** $y = 5x^2 + 20x$ **24.** $y = -2x^2 + 2x$

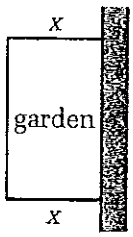
A maker of medical supplies wants to design an adhesive bandage with a square pad in the center, as shown at the right.



25. Let x represent the width of the bandage. Let y represent the area of the adhesive region of the bandage (shaded). Write an equation that expresses y as a function of x in factored form.

26. Find the x-intercepts for your equation. Use the x-intercepts to help you graph the equation you found in Exercise 25.

Yoshi is going to build a fence for a rectangular garden that will be alongside a brick wall at the back of his property. He has 120 ft of fencing. He will use the brick wall for one side of the garden. Refer to the diagram to answer Exercises 27 and 28.



27. Write an equation to express the area y of the garden as a function of x.

28. Find the maximum area possible for the garden.