Name _____ Date _____

LESSON 8.5

Practice C

For use with the lesson "Factor $x^2 + bx + c$"

Factor the trinomial.

1. $x^2 - x - 56$ **2.** $m^2 + 14m + 48$ **3.** $y^2 - 15y + 54$

4. $p^2 + 12p + 20$ **5.** $w^2 - 14w + 45$ **6.** $x^2 + 2x - 24$

Solve the equation.

7. $n^2 - 11n - 60 = 0$ **8.** $z^2 + 22z + 121 = 0$ **9.** $c^2 - 24c + 144 = 0$

10. $x^2 + 5x - 500 = 0$ **11.** $b^2 + b - 132 = 0$ **12.** $m^2 + 17m + 72 = 0$

13. $r^2 - 4r - 60 = 0$ **14.** $p^2 - 6p - 72 = 0$ **15.** $y^2 - 16y + 64 = 0$

Find the zeros of the polynomial function.

16. $f(x) = x^2 + 30x + 225$ **17.** $h(x) = x^2 - 5x - 150$ **18.** $g(x) = x^2 - 13x + 30$

19. $g(x) = x^2 - 10x - 600$ **20.** $f(x) = x^2 + 16x + 28$ **21.** $f(x) = x^2 + 13x + 40$

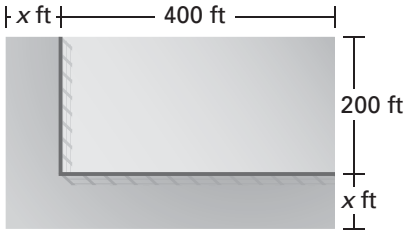
Solve the equation.

22. $x(x - 4) = 21$ **23.** $b(b + 2) = 24$ **24.** $n(n - 11) = -24$

25. $x^2 + 13(x + 2) = -10$ **26.** $x^2 - 10(x + 2) = 4$ **27.** $y(y - 15) = -56$

28. $x^2 + 2\left(\frac{1}{2}x - 10\right) = 0$ **29.** $x(x + 17) = -42$ **30.** $c(c - 11) = -18$

31. Zoo Exhibit A zoo is building a walkway along two sides of an exhibit. The exhibit is rectangular with a width of 400 feet and a length of 200 feet. The walkway will have the same width on each side of the exhibit.

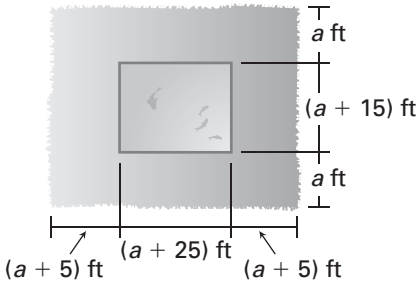


a. Write a polynomial that represents the combined area of the exhibit and the walkway.

b. The combined area of the exhibit and walkway should be 95,625 square feet. How wide should the walkway be?

c. If concrete costs $15 per square foot, how much will it cost to pave the walkway?

32. Fish Pond A rectangular fish pond is positioned in the center of a rectangular grassy area, as shown. The area of the pond is 2000 square feet.



a. Use the dimensions given in the diagram to find the dimensions of the pond.

b. The combined area of the pond and the surrounding grassy area is 9900 square feet. Find the length and width of the grassy area.