Name _____ Class _____ Date _____

7-3

Additional Practice

Factor each trinomial.

1. $x^2 + 7x + 10$

2. $x^2 + 9x + 8$

3. $x^2 + 13x + 36$

4. $x^2 + 9x + 14$

5. $x^2 + 7x + 12$

6. $x^2 + 9x + 18$

7. $x^2 - 9x + 18$

8. $x^2 - 5x + 4$

9. $x^2 - 9x + 20$

10. $x^2 - 12x + 20$

11. $x^2 - 11x + 18$

12. $x^2 - 12x + 32$

13. $x^2 + 7x - 18$

14. $x^2 + 10x - 24$

15. $x^2 + 2x - 3$

16. $x^2 + 2x - 15$

17. $x^2 + 5x - 6$

18. $x^2 + 5x - 24$

19. $x^2 - 5x - 6$

20. $x^2 - 2x - 35$

21. $x^2 - 7x - 30$

22. $x^2 - x - 56$

23. $x^2 - 2x - 8$

24. $x^2 - x - 20$

25. Factor $n^2 + 5n - 24$. Show that the original polynomial and the factored form describe the same sequence of numbers for $n = 0, 1, 2, 3$, and 4.

n	$n^2 + 5n - 24$

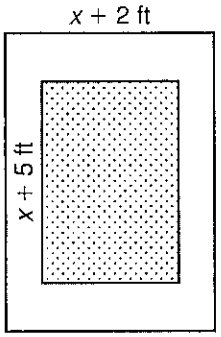
n	

Problem Solving

Write the correct answer.

1. A plot of land is rectangular and has an area of $x^2 - 5x - 24$ m^2. The length is $x + 3$ m. Find the width of the plot.

2. An antique Persian carpet has an area of $(x^2 + x - 20)$ ft^2 and a length of $(x + 5)$ feet. The rug is displayed on a wall in a museum. The wall has a width of $(x + 2)$ feet and an area of $(x^2 + 17x + 30)$ ft^2. Write expressions for the length and width of both the rug and wall. Then find the dimensions of the rug and the wall if $x = 20$ feet.



3. The area of a poster board is $x^2 + 3x - 10$ inches. The width is $x - 2$ inches.

   a. Write an expression for the length of the poster board.

   b. Find the dimensions of the poster board when $x = 14$.

   c. Write a polynomial for the area of the poster board if one inch is removed from each side.

The figure shows the plans for an addition on the back of a house. Use the figure to answer questions 4–6. Select the best answer.

4. The area of the addition is $(x^2 + 10x - 200)$ ft^2. What is its length?

   A $(x - 20)$ feet

   B $(x - 2)$ feet

   C $(x + 2)$ feet

   D $(x + 20)$ feet

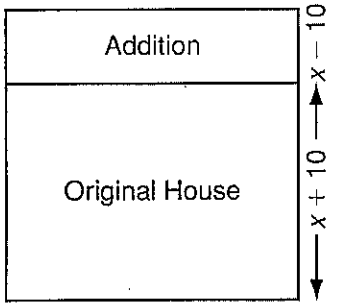
5. What is the area of the original house?

   F $(x^2 - 10x - 200)$ ft^2

   G $(x^2 + 8x - 20)$ ft^2

   H $(x^2 + 12x + 200)$ ft^2

   J $(x^2 + 30x + 200)$ ft^2



6. The homeowners decide to extend the addition. The area with the addition is now $(x^2 + 12x - 160)$ ft^2. By how many feet was the addition extended?

   A 1 foot C 3 feet

   B 2 feet D 4 feet