UNDERSTAND

PRACTICE

11. Make Sense and Persevere The area of a rectangle is given. Identify the missing terms in the length and width.

$(x + \underline{\quad})$

| $x^2 + 11x + 28$ | $(\underline{\quad} + 4)$ |

12. Use Structure The table shows the product when multiplying two binomials. What is the relationship between the numbers in the factors and the terms in the product?

Binomials	Products
$(x + 3)(x + 4)$	$x^2 + 7x + 12$
$(x + 2)(x - 5)$	$x^2 - 3x - 10$
$(x - 3)(x - 5)$	$x^2 - 8x + 15$

13. Error Analysis Describe and correct the error a student made when multiplying two binomials.

$(2x + 2)(4x - 1)$
$8x^2 - 2$

✗

14. Use Appropriate Tools Use a table to find the product of $(3x + 4)(x^2 + 3x - 2)$. How are the like terms in a table arranged?

15. Higher Order Thinking Is it possible for the product of a monomial and trinomial to be a binomial? Explain.

16. Mathematical Connections A triangle has a height of $2x + 6$ and a base length of $x + 4$. What is the area of the triangle?

17. Communicate Precisely Explain how to find the combined volume of the two rectangular prisms described. One has side lengths of $3x$, $2x + 1$, and $x + 3$. The other has side lengths of $5x - 2$, $x + 9$, and 8.

Find each product. SEE EXAMPLE 1

18. $6x(x^2 - 4x - 3)$

19. $-y(-3y^2 + 2y - 7)$

20. $3x^2(-x^2 + 2x - 4)$

21. $-5x^3(2x^3 - 4x^2 + 2)$

Use a table to find each product. SEE EXAMPLE 2

22. $(x - 6)(3x + 4)$

23. $(2x + 1)(4x + 1)$

Use the Distributive Property to find each product.
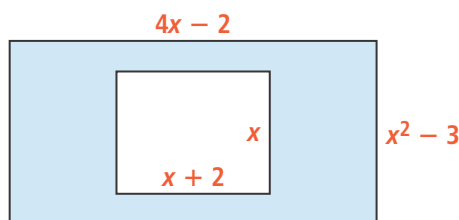SEE EXAMPLE 3

24. $(x - 6)(x + 3)$

25. $(3x - 4)(2x + 5)$

26. $(x - 8)(2x + 3)$

Find each product. SEE EXAMPLE 4

27. $(y + 3)(2y^2 - 3y + 4)$

28. $(2x - 7)(3x^2 - 4x + 1)$

29. $(2x^2 - 3x)(-3x^2 + 4x - 2)$

30. $(-2x^2 + 1)(2x^2 - 3x - 7)$

31. $(x^2 + 3x)(3x^2 - 2x + 4)$

32. Find the area of the shaded region.
SEE EXAMPLE 6

33. A rectangular park is $6x + 2$ ft long and $3x + 7$ ft wide. In the middle of the park is a square turtle pond that is 8 ft wide. What expression represents the area of the park not occupied by the turtle pond? SEE EXAMPLE 6

APPLY

34. Model With Mathematics The volume of a cube is calculated by multiplying the length, width, and height. What is the volume of this cube?

$3x + 2$
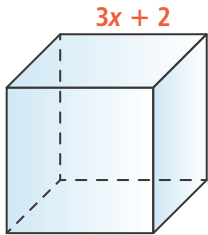
**35. Reason** The product of the binomial and the trinomial shown is a polynomial with four terms. Change one of the terms of the binomial or the trinomial so the product is also a trinomial.

$$(2x + 2)(x^2 + 2x - 4) = 2x^3 + 7x^2 - 2x - 12$$

**36. Make Sense and Persevere** What is the area of the painting shown?

$x + 6$

$x + 2$

$x + 4$ x
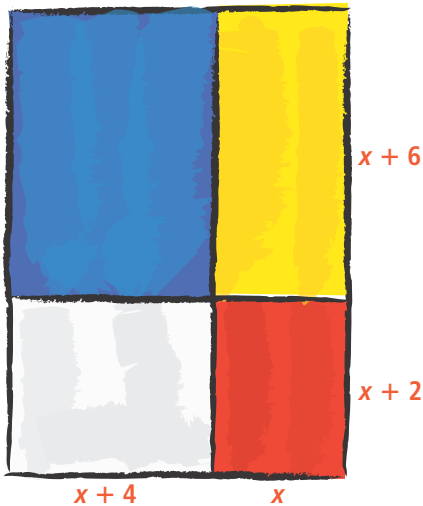
37. Make Sense and Persevere A dance teacher wants to expand her studio to fit more classes. What is the combined area of Studio A and Studio B?

$x + 3$

$4x - 8$ | Studio A

$3x + 6$

Studio B | $2x$
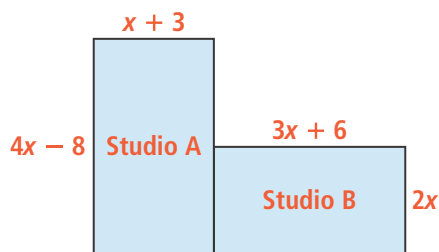
☑ **ASSESSMENT PRACTICE**

38. Write an expression for the product of $(x + 4)(2x + 1) - [(x - 5)(x + 3)] + 3x^2$.

39. SAT/ACT What is the product of $(-2x + 2)(x - 5)$?

Ⓐ $-2x^2 - 10$

Ⓑ $-2x^2 + 12x - 10$

Ⓒ $-x - 3$

Ⓓ $-2x^2 - 12x - 10$

40. Performance Task The net of a rectangular box and its dimensions are shown.

$2x + 5$

$x + 3$

x

$x + 3$

x x
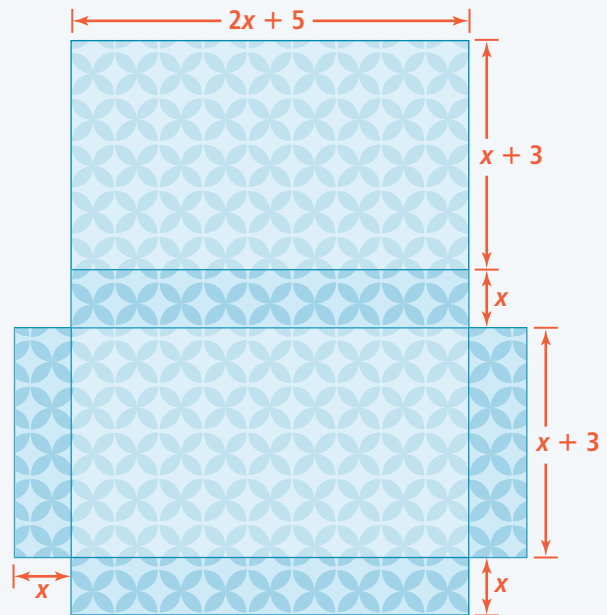
Part A Write an expression for the surface area of the box in terms of x.

Part B Evaluate the polynomial expression you found in Part A. What integer value of x would give the prism a surface area of about 600 cm²?