

## SECTION 4.5 (CONTINUED)

### REVIEW:

- ① SIMPLIFY  $\sqrt{72}$
- ② SIMPLIFY  $(2x^2y)^3$
- ③ SIMPLIFY  $(x+2)(x-3)$
- ④ FACTOR  $10a^2 + 40a$
- ⑤ SOLVE  $x^2 - 7x + 12 = 0$

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## PART 2. SOLVING $ax^2 + bx + c = 0$

EXAMPLE 1. FACTOR  $2x^2 + 5x + 3$ .

"AC PRODUCT RULE"  $a =$   $b =$   $c =$

TWO # GAME: FIND 2 NUMBERS THAT MULTIPLY TO  $ac$   
THAT ADD TO  $b$ .

SPLIT + GROUP: SPLIT THE LINEAR TERM UP AND FACTOR  
BY GROUPING.

EXAMPLE 2. FACTOR  $7x^2 + 29x + 4$

EXAMPLE 3. FACTOR  $3x^2 + 15x + 18$

APPLICATION 1. FACTOR:

(A)  $5x^2 + 13x + 6$

(B)  $6x^2 + 22x - 8$

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EXAMPLE 4. FACTOR  $3x^2 - 17x + 20$

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APPLICATION 2. FACTOR:

(A)  $2x^2 - x - 1$

(B)  $10x^2 - 35x + 30$

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EXAMPLE 5. FACTOR  $4x^2 - 3x + 5$

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APPLICATION 3: FACTOR

(A)  $4x^2 - x + 7$

(B)  $2x^2 + 3x - 5$

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(2)

## PRACTICE

① FACTOR. IF PRIME, WRITE "PRIME."

(A)  $5x^2 + 34x + 24$

(B)  $2x^2 + 19x + 24$

(C)  $4x^2 + 22x + 10$

(D)  $4x^2 + 38x + 70$

(E)  $2x^2 - 3x - 9$

(F)  $4x^2 - 13x + 10$

(G)  $2x^2 + 3x + 6$

(H)  $5x^2 + 3x + 4$

(I)  $12x^2 + 69x + 45$

(J)  $4x^2 - 5x + 7$

(K)  $5x^2 + 23x + 24$

(L)  $3x^2 - 8x + 15$

② SOLVE EACH EQUATION.

(A)  $2x^2 + 9x - 18 = 0$

(B)  $4x^2 + 17x + 15 = 0$

(C)  $-3x^2 + 5x = -2$

(D)  $-4x^2 + 19x = -30$

**8-7****Skills Practice****Solving  $ax^2 + bx + c = 0$** 

Factor each polynomial, if possible. If the polynomial cannot be factored using integers, write *prime*.

1.  $2x^2 + 5x + 2$

2.  $3n^2 + 5n + 2$

3.  $2t^2 + 9t - 5$

4.  $3g^2 - 7g + 2$

5.  $2t^2 - 11t + 15$

6.  $2x^2 + 3x - 6$

7.  $2y^2 + y - 1$

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

9.  $4x^2 - 3x - 3$

10.  $4b^2 + 15b - 4$

11.  $9p^2 + 6p - 8$

12.  $6q^2 - 13q + 6$

13.  $3a^2 + 30a + 63$

14.  $10w^2 - 19w - 15$

Solve each equation. Check the solutions.

15.  $2x^2 + 7x + 3 = 0$

16.  $3w^2 + 14w + 8 = 0$

17.  $3n^2 - 7n + 2 = 0$

18.  $5d^2 - 22d + 8 = 0$

19.  $6h^2 + 8h + 2 = 0$

20.  $8p^2 - 16p = 10$

21.  $9y^2 + 18y - 12 = 6y$

22.  $4a^2 - 16a = -15$

23.  $10b^2 - 15b = 8b - 12$

24.  $6d^2 + 21d = 10d + 35$