

LESSON

8-3

Practice B

Factoring $x^2 + bx + c$

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. $x^2 - x - 20$

Name _____ Date _____ Class _____

Review for Mastery

1. $5x(4x - 3)$
2. $11a(4a + 1)$
3. $12(2y - 3x)$
4. $(x + 7)(5x + 2)$
5. $(a + 4)(3a - 2)$
6. $(4y + 1)^2$
7. $3x^2; 4; 3x^2; 4; 3x^2 + 4$
8. $5a^2; 6; 5a^2; 6; 5a^2 + 6$
9. $(3x^2 + 2)(7x + 4)$
10. $(10x^2 + 3)(4x - 5)$

Challenge

1. $(x + 6)(x + 2)$
2. $(x - 6)(x - 7)$
3. $(2x + 7)(x + 3)$
4. $(5x + 2)(2x + 3)$
5. $(5x + 4)(x + 3)$
6. $(2x - 5)(2x - 3)$
7. $(x + 1)(x^2 + x + 1)$
8. $(x - 2)(3x^2 + 4x + 5)$
9. $(x^4 + 3)(x^2 + 5x + 7)$
10. $(6x^8 + 7x^4 + 3)(x^2 + 4x + 8)$

Problem Solving

1. 4x ft; $(x + 1)$ ft
2. $-3(x^2 + 9x - 275)$
3. $4(3x + 7)$; 31 feet
4. $(5x + 4)$ m; $(x^2 - 2)$ m
5. C
6. G
7. C
8. F

Reading Strategies

1. $4x^2(x + 3)$
2. $6t(5t^3 - 3)$
3. $p(9p + 1)$
4. $4(7r^4 - 5r^2 - 2)$
5. $15p^5(2p^3 + 3)$
6. $2m^2(3m^6 - 8m - 3)$

LESSON 8-3

Practice A

1. 3; 2
2. 4; 1
3. 5; 4
4. $(x + 7)(x + 3)$
5. $(x + 6)(x + 5)$
6. $(x + 8)(x + 2)$
7. 6; 2
8. 5; 3
9. 16; 1
10. $(x - 9)(x - 3)$

11. $(x - 4)(x - 11)$
12. $(x - 8)(x - 5)$
13. 10; 4
14. 3; 1
15. 8; 4
16. 12; 2
17. 14; 2
18. 5; 2
19. $(x + 3)(x - 5)$
20. $(x + 2)(x - 10)$
21. $(x + 6)(x - 8)$
22. $(x + 3)(x - 4)$
23. $(x + 1)(x - 3)$
24. $(x + 1)(x - 2)$
25. 1; 5

n	$n^2 + 6n + 5$
0	$0^2 + 6(0) + 5 = 5$
1	$1^2 + 6(1) + 5 = 12$
2	$2^2 + 6(2) + 5 = 21$
3	$3^2 + 6(3) + 5 = 32$
4	$4^2 + 6(4) + 5 = 45$

n	$(n + 1)(n + 5)$
0	$(0 + 1)(0 + 5) = 5$
1	$(1 + 1)(1 + 5) = 12$
2	$(2 + 1)(2 + 5) = 21$
3	$(3 + 1)(3 + 5) = 32$
4	$(4 + 1)(4 + 5) = 45$

Practice B

1. $(x + 2)(x + 5)$
2. $(x + 1)(x + 8)$
3. $(x + 4)(x + 9)$
4. $(x + 7)(x + 2)$
5. $(x + 3)(x + 4)$
6. $(x + 6)(x + 3)$
7. $(x - 6)(x - 3)$
8. $(x - 4)(x - 1)$
9. $(x - 5)(x - 4)$
10. $(x - 2)(x - 10)$
11. $(x - 9)(x - 2)$
12. $(x - 8)(x - 4)$
13. $(x + 9)(x - 2)$
14. $(x + 12)(x - 2)$
15. $(x + 3)(x - 1)$
16. $(x + 5)(x - 3)$
17. $(x + 6)(x - 1)$
18. $(x + 8)(x - 3)$
19. $(x + 1)(x - 6)$
20. $(x + 5)(x - 7)$
21. $(x + 3)(x - 10)$
22. $(x + 7)(x - 8)$
23. $(x + 2)(x - 4)$
24. $(x + 4)(x - 5)$

25. $(n + 8)(n - 3)$

n	$n^2 + 5n - 24$
0	$0^2 + 5(0) - 24 = -24$
1	$1^2 + 5(1) - 24 = -18$
2	$2^2 + 5(2) - 24 = -10$
3	$3^2 + 5(3) - 24 = 0$
4	$4^2 + 5(4) - 24 = 12$

n	$(n + 8)(n - 3)$
0	$(0 + 8)(0 - 3) = -24$
1	$(1 + 8)(1 - 3) = -18$
2	$(2 + 8)(2 - 3) = -10$
3	$(3 + 8)(3 - 3) = 0$
4	$(4 + 8)(4 - 3) = 12$

Practice C

1. $(x + 6)(x + 4)$
2. $(y + 2)(y + 10)$
3. $(a + 9)(a + 6)$
4. $(h + 15)(h + 3)$
5. $(x + 12)(x + 4)$
6. $(c + 5)(c + 10)$
7. $(x - 12)(x - 4)$
8. $(d - 11)(d - 8)$
9. $(x - 2)(x - 18)$
10. $(m - 1)(m - 42)$
11. $(x - 2)(x - 14)$
12. $(n - 7)(n - 5)$
13. $(f + 7)(f - 4)$
14. $(b + 14)(b - 3)$
15. $(x + 20)(x - 8)$
16. $(g + 8)(g - 6)$
17. $(k + 18)(k - 2)$
18. $(x + 9)(x - 7)$
19. $(p + 2)(p - 4)$
20. $(x + 8)(x - 9)$
21. $(q + 3)(q - 6)$
22. $(x + 4)(x - 8)$
23. $(t + 3)(t - 13)$
24. $(w + 5)(w - 25)$
25. $(n + 12)(n - 4)$

n	$n^2 + 8n - 48$
0	$0^2 + 8(0) - 48 = -48$
1	$1^2 + 8(1) - 48 = -39$
2	$2^2 + 8(2) - 48 = -28$
3	$3^2 + 8(3) - 48 = -15$
4	$4^2 + 8(4) - 48 = 0$

n	$(n + 12)(n - 4)$
0	$(0 + 12)(0 - 4) = -48$
1	$(1 + 12)(1 - 4) = -39$
2	$(2 + 12)(2 - 4) = -28$
3	$(3 + 12)(3 - 4) = -15$
4	$(4 + 12)(4 - 4) = 0$

Review for Mastery

1. 16; 10

Factors	Sum
1 and 16	17
2 and 8	10
4 and 4	8

$(x + 2)(x + 8)$

2. 20; -9

Factors	Sum
-1 and -20	-21
-2 and -10	-12
-4 and 5	-9

$(x - 4)(x - 5)$

3. $(x + 12)(x + 1)$ 4. $(x + 10)(x + 5)$

5. $(x - 9)(x - 4)$

6. -20; 1

Factors	Sum
-1 and 20	19
-2 and 10	8
-4 and 5	1

$(x - 4)(x + 5)$

7. -4; -3

Factors	Sum
1 and -4	-3
-2 and 2	0

$(x + 1)(x - 4)$