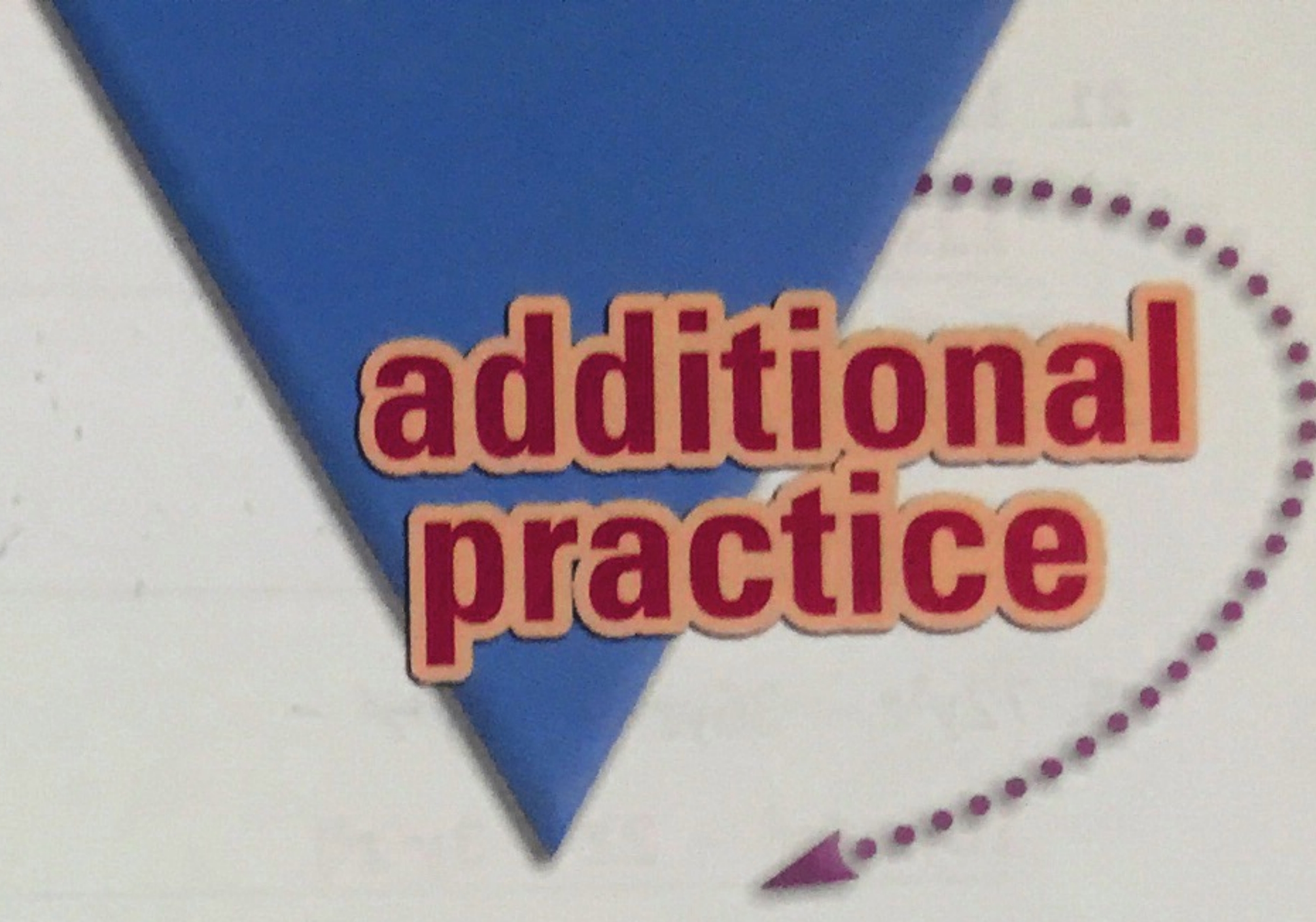


Module 12 Simplifying Algebraic Expressions by
Factoring Polynomials
Lesson 1 Factoring by Removing the Greatest
Common Factor



**additional
practice**

Factor, if possible.

1. $3a + 18$

$3(a + 6)$

3. $7g + 49$

$7(g + 7)$

5. $5m^2 - 10m$

$5m(m - 2)$

7. $9a^2 + 10b^2$

No common monomial factor

9. $25g^9 - 45g^7$

$5g^7(5g^2 - 9)$

11. $12x^2 - 24x + 24$

$12(x^2 - 2x + 2)$

13. $5y^4 + 20y^3 - 15y^2$

$5y^2(y^2 + 4y - 3)$

15. $21c^2 - 14c^3 - 28c^4$

$7c^2(3 - 2c - 4c^2)$

17. $a^2b^3 - a^3b^4$

$a^2b^3(1 - ab)$

19. $14g^3h^5 - 7gh^4$

$7gh^4(2g^2h - 1)$

2. $9m - 27$

$9(m - 3)$

4. $12h - 24$

$12(h - 2)$

6. $15a^4 + 30a^2$

$15a^2(a^2 + 2)$

8. $30j^3 - 48j^5$

$6j^3(5 - 8j^2)$

10. $22a - 2a^3$

$2a(11 - a^2)$

12. $8a^2 + 12a + 3$

No common monomial factor

14. $81z^5 + 72z^3 + 36z^2$

$9z^2(9z^3 + 8z + 4)$

16. $32h^2 - 16h^5 + 8h^7$

$8h^2(4 - 2h^3 + h^5)$

18. $6a^2b^2 + 12ab$

$6ab(ab + 2)$

20. $16cd^2 - 12c^2f$

$4c(4d^2 - 3cf)$

NAME _____

Module 12 Simplifying Algebraic Expressions by Factoring Polynomials
Lesson 4 Factoring $x^2 + bx + c$

additional practice

Factor, if possible.

1. $x^2 + 3x + 2$

$(x + 2)(x + 1)$

3. $a^2 + 12a + 20$

$(a + 10)(a + 2)$

5. $p^2 - 10p + 24$

$(p - 6)(p - 4)$

7. $y^2 - 8y + 7$

$(y - 7)(y - 1)$

9. $t^2 - 5t + 24$

Cannot be factored; prime

11. $c^2 - 14c + 48$

$(c - 8)(c - 6)$

13. $v^2 - v - 6$

$(v - 3)(v + 2)$

15. $d^2 - 14d - 51$

$(d - 17)(d + 3)$

17. $x^2 - 24x - 81$

$(x - 27)(x + 3)$

19. $p^2 + 2p - 8$

$(p + 4)(p - 2)$

2. $n^2 + 7n + 12$

$(n + 4)(n + 3)$

4. $k^2 + 6k + 9$

$(k + 3)^2$ or $(k + 3)(k + 3)$

6. $w^2 + 15w + 36$

$(w + 12)(w + 3)$

8. $b^2 - 8b + 15$

$(b - 3)(b - 5)$

10. $z^2 - 13z + 22$

$(z - 11)(z - 2)$

12. $m^2 - 11m + 24$

$(m - 8)(m - 3)$

14. $g^2 - 2g - 15$

$(g - 5)(g + 3)$

16. $f^2 - 22f - 72$

Cannot be factored; prime

18. $n^2 - 21n - 100$

$(n - 25)(n + 4)$

20. $w^2 + w - 12$

$(w + 4)(w - 3)$