

# FACTORING $ax^2 + bx + c$

Factor. Show some form of checking.

Example:  $6x^2 - x - 15$

Solution: Write the factors of  $6x^2$ :  $(6 \quad)(x \quad)$  and  $(3x \quad)(2x \quad)$   
Write the integral factors of  $-15$ :  $(15, -1); (-15, 1); (5, -3); (-5, 3)$   
Test the possible binomials.

$$6x^2 - x - 15 = (3x - 5)(2x + 3)$$

- |                              |                              |
|------------------------------|------------------------------|
| 1. $2x^2 + 15x + 7$ _____    | 2. $2x^2 - 5x - 12$ _____    |
| 3. $3y^2 - 13y - 10$ _____   | 4. $5n^2 - 2n - 7$ _____     |
| 5. $7x^2 - 11x + 4$ _____    | 6. $3y^2 + 2y - 8$ _____     |
| 7. $4m^2 + 3m - 27$ _____    | 8. $6x^2 + 31x + 5$ _____    |
| 9. $2y^2 - 17y + 21$ _____   | 10. $5n^2 + 17n + 6$ _____   |
| 11. $4x^2 + 8x + 3$ _____    | 12. $6y^2 - 5y - 6$ _____    |
| 13. $10x^2 + 21x - 10$ _____ | 14. $8m^2 - 2m - 15$ _____   |
| 15. $14y^2 - 33y - 5$ _____  | 16. $6x^2 - 7x - 20$ _____   |
| 17. $6n^2 - 25n + 14$ _____  | 18. $15y^2 - 23y - 28$ _____ |
| 19. $15x^2 - 28x - 32$ _____ | 20. $15n^2 - 43n + 30$ _____ |
| 21. $6x^2 - x - 40$ _____    | 22. $14y^2 + 33y + 18$ _____ |
| 23. $15n^2 + 8n - 16$ _____  | 24. $10x^2 + 13x - 30$ _____ |

**CHAPTER 7 (For Lesson 7.4)**

**FACTORING TRINOMIALS:**

**PRACTICE 54**

$ax^2 + bx + c$

Factor each trinomial. If not possible, write *irreducible*. *Show some form of checking*

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

\_\_\_\_\_

2.  $3x^2 - 5x + 2$

\_\_\_\_\_

3.  $3x^2 - x - 2$

\_\_\_\_\_

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

\_\_\_\_\_

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

\_\_\_\_\_

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

\_\_\_\_\_

7.  $5x^2 - 13x - 6$

\_\_\_\_\_

8.  $5x^2 + 13x - 6$

\_\_\_\_\_

9.  $2x^2 + 17x + 35$

\_\_\_\_\_

10.  $2x^2 - 3x - 35$

\_\_\_\_\_

11.  $2x^2 + 3x - 35$

\_\_\_\_\_

12.  $2x^2 - 17x + 35$

\_\_\_\_\_

13.  $2x^2 + 3x + 5$

\_\_\_\_\_

14.  $6x^2 - 5x + 7$

\_\_\_\_\_

15.  $10x^2 + 17x + 3$

\_\_\_\_\_

16.  $10x^2 - 17x + 3$

\_\_\_\_\_

17.  $10x^2 + 13x - 3$

\_\_\_\_\_

18.  $10x^2 - 13x - 3$

\_\_\_\_\_

19.  $8x^2 + 26x + 15$

\_\_\_\_\_

20.  $6x^2 - 31x + 35$

\_\_\_\_\_

21.  $10x^2 - 11x - 21$

\_\_\_\_\_

22.  $4x^2 + 12x + 9$

\_\_\_\_\_

**ANSWERS**

Factor Completely! Show some form of checking

25. \_\_\_\_\_

25.  $15x^2 + x - 6$

26.  $12w^2 + 19w + 4$

26. \_\_\_\_\_

27. \_\_\_\_\_

27.  $6m^2 + 25m - 25$

28.  $8x^2 - 6x - 9$

28. \_\_\_\_\_

29. \_\_\_\_\_

29.  $9x^2 - 12x + 4$

30.  $20x^2 - 23x + 6$

30. \_\_\_\_\_

31. \_\_\_\_\_

31.  $12x^2 - 8x - 15$

32.  $16a^2 + 40a + 25$

32. \_\_\_\_\_

33. \_\_\_\_\_

33.  $3y^2 + 7y - 6$

34.  $12x^2 + 11x - 15$

34. \_\_\_\_\_

35. \_\_\_\_\_

35.  $8x^2 - 27x - 20$

36.  $24v^2 + 5v - 36$

36. \_\_\_\_\_

37. \_\_\_\_\_

37.  $2x^2 + 3xy + y^2$

38.  $3x^2 - 5xy + 2y^2$

38. \_\_\_\_\_

39. \_\_\_\_\_

39.  $5a^2 - 8ab - 4b^2$

40.  $5x^2 + 7xy - 6y^2$

40. \_\_\_\_\_

41. \_\_\_\_\_

41.  $9x^2 + 4xy - 5y^2$

42.  $16x^2 + 32xy + 15y^2$

42. \_\_\_\_\_

43. \_\_\_\_\_

43.  $6m^2 - 17mn + 12n^2$

44.  $15x^2 - xy - 6y^2$

44. \_\_\_\_\_

45. \_\_\_\_\_

45.  $36a^2 - 3ab - 5b^2$

46.  $3q^2 - 17qr - 6r^2$

46. \_\_\_\_\_

47. \_\_\_\_\_

47.  $x^2 + 4xy + 4y^2$

48.  $25b^2 - 80bc + 64c^2$

48. \_\_\_\_\_