

Chapter 9 Section 3: Factoring Quadratics with Integer Coefficients

Problems

Factor each expression, where possible. If it is not factorable, write “**Prime**”.

Remember that $(a + b)(c + d) = (c + d)(a + b)$ (multiplication is commutative) so the order of the factors doesn't matter.

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

2. $x^2 + 4x + 3 =$ _____

3. $x^2 - 4x - 45 =$ _____

4. $x^2 - 16x + 60 =$ _____

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

6. $x^2 - 10x + 3 =$ _____

7. $x^2 - 14x + 48 =$ _____

8. $x^2 - 2x - 35 =$ _____

9. $a^2 + 20a + 84 =$ _____

10. $a^2 - 6a + 8 =$ _____

11. $x^2 + 30x + 200 =$ _____

12. $x^2 - 11x - 42 =$ _____

13. $x^2 - 5x + 6 =$ _____

14. $x^2 - 10x - 200 =$ _____

15. $y^2 + 14y - 15 =$ _____

16. $y^2 + 17y - 18 =$ _____

17. $x^2 + x + 1 =$ _____

18. $x^2 + 22x + 5 =$ _____

19. $u^2 - 7u - 78 =$ _____

20. $v^2 - 7v - 78 =$ _____

21. $x^2 - x - 1 =$ _____

22. $x^2 - 2x - 7 =$ _____

23. $10x^2 - 200x - 690 =$ _____

(Hint: Factor out a 10 first)

25. $5w^2 + 85w + 330 =$ _____

(Hint: Factor out a 5 first)

27. $3x^2 + 36x + 81 =$ _____

(Hint: Factor out a 3 first)

29. $4n^5 - 68n^4 + 264n^3 =$ _____

(Hint: Factor out a $4n^3$ first)

31. $21x^2 + x - 2 =$ _____

33. $4z^2 - 5z + 3 =$ _____

35. $2x^2 + x - 10 =$ _____

37. $6x^2 - 7x + 2 =$ _____

39. $4x^2 - 7x + 4 =$ _____

41. $-x^2 - 6x + 55 =$ _____

43. $-x^2 + 15x - 54 =$ _____

45. $-x^2 - 12x - 11 =$ _____

24. $3x^2 + 12x - 288 =$ _____

(Hint: Factor out a 3 first)

26. $4p^2 - 8p - 320 =$ _____

(Hint: Factor out a 4 first)

28. $2x^2 - 40x + 128 =$ _____

(Hint: Factor out a 2 first)

30. $2k^6 - 30k^5 + 100k^4 =$ _____

(Hint: Factor out a $2k^4$ first)

32. $12x^2 - 11x - 15 =$ _____

34. $3z^2 - 4z + 7 =$ _____

36. $3x^2 - 5x - 2 =$ _____

38. $9x^2 + 15x - 14 =$ _____

40. $2x^2 + 7x + 3 =$ _____

42. $-x^2 + 5x + 14 =$ _____

44. $-x^2 + 12x - 20 =$ _____

46. $-x^2 - 13x - 30 =$ _____