

3.2

Factoring Trinomials

2023-24

Name _____ Date _____ Period _____

Simplify.

1. $(x-7)(x-8)$

2. $(3x-2)^2$

3. $(2x+1)(x-3)$

Complete the factoring of each trinomial.

4. $x^2 + \square x + 8 = (x + \square)(x + 8)$

5. $t^2 + 4t - \square = (t - 6)(t + \square)$

6. What did you think about when deciding on the numbers for the boxes?

Factor each trinomial.

7. $x^2 - 15x + 56$

8. $3x^2 + 7x - 6$

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

10. $x^2 + 12x + 36$

11. $x^2 + 13x - 30$

12. $7x^2 - 22x + 3$

13. $6x^2 + 11x + 4$

14. $9c^2 - 6c + 1$

15. $x^2 - 7x + 5$

Factor each polynomial completely. If it doesn't factor, write prime. Remember to look for a GCF first.

16. $5x^2 + 5x$

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

18. $3x^2 + 21x - 24$

19. $6x^2 + 27x - 15$

20. $2w^2 + 10w + 6$

21. $6y^2 + 13y + 6$

22. $6xy^2 + 3xy$

23. $-3x^4 + 6x^3$

24. $-q^2 - 2q + 24$

25. $5x^{10} - 25x^5 - 35$

26. $x^4 + x^2 - 12$

27. $2x^4 + 16x^2 + 32$

Solve each polynomial.

28. $3w^2 - 18w = 0$

29. $(x - 5)(x + 7)(4x - 3) = 0$

30. $y^2 + 13y - 48 = 0$

31. $2z^3 + 10z^2 - 48z = 0$

32. $y^2 - 15y + 44 = 0$

33. $(x - 2)(x^2 - 6x + 9) = 0$