Chapter 9

Find the sum or difference.

9.1 **1.** $(6x^2 + 7) + (x^2 - 9)$

2. $(8y^2 - 3y - 10) + (-11y^2 + 2y - 7)$

3. $(10m^2 - 7m + 2) - (3m^2 - 2m + 5)$

4. $(2t^3 - 3t^2 + 5t) - (6t^3 + 3t^2 - 5t)$

5. $(6b^3 + 12b^2 - b) - (15b^2 + 7b - 8)$

6. $(r^2 - 8 + 4r^3 + 5r) - (7r^3 - 3r^2 + 5)$

Find the product.

9.2 **7.** $5x^4(2x^3 - 3x^2 + 5x - 1)$

8. $(x^2 + 4x + 2)(x + 7)$

9. $(2x + 3)(4x + 2)$

10. $(2x^2 - 5x + 6)(3x - 2)$

11. $(3x - 7)(x + 5)$

12. $(9t - 2)(2t - 3)$

9.3 **13.** $(x + 10)^2$

14. $(m + 8)(m - 8)$

15. $(4x - 2)(4x + 2)$

16. $(3x - 4y)(3x + 4y)$

17. $(6 - 3t)(6 + 3t)$

18. $(-11x - 4y)^2$

9.4 **Solve the equation.**

19. $(m + 8)(m - 2) = 0$

20. $(2y - 6)(y + 3) = 0$

21. $(5y - 3)(2y - 4) = 0$

22. $3b^2 + 9b = 0$

23. $-12m^2 - 3m = 0$

24. $14k^2 = 28k$

9.5 **Factor the trinomial.**

25. $y^2 + 7y + 12$

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

27. $x^2 + 5x - 36$

28. $q^2 + 3q - 40$

29. $m^2 - 29m + 100$

30. $y^2 + 14y - 72$

9.5 **Solve the equation.**

31. $m^2 - 7m + 10 = 0$

32. $p^2 - 7p = 18$

33. $z^2 - 13z + 24 = -12$

34. $n^2 + 8 = 6n$

35. $r^2 - 15r = -8r - 10$

36. $c^2 - 8 = -13c + 6$

9.6 **Factor the trinomial.**

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

38. $3k^2 - 10k + 8$

39. $4k^2 - 12k + 5$

40. $6t^2 - 5t - 6$

41. $-3s^2 - 7s - 2$

42. $2v^2 - 5v + 3$

9.6 **Solve the equation.**

43. $-3x^2 + 14x - 8 = 0$

44. $8t^2 + 6t = 9$

45. $2x^2 + 3x - 2 = 0$

46. $3p^2 - 28 = 17p$

47. $16m^2 - 1 = -15m$

48. $t(6t - 7) = 3$

9.7 **Factor the polynomial.**

49. $y^2 - 36$

50. $9y^2 - 49$

51. $12y^2 - 27$

52. $x^2 - 8x + 16$

53. $4x^2 - 12x + 9$

54. $27x^2 - 36x + 12$

55. $g^2 + 10g + 25$

56. $9b^2 + 24b + 16$

57. $4w^2 + 28w + 49$

9.8 **Factor the polynomial completely.**

58. $2x^2 + 8x + 6$

59. $3z^2 - 16z + 5$

60. $5m^2 - 23m + 12$

61. $3y^3 + 15y^2 + 2y + 10$

62. $30z^3 - 14z^2 - 8z$

63. $98m^3 - 18m$

64. $8h^2k - 32k$

65. $2h^3 - 3h^2 - 18h + 27$

66. $-12z^3 + 12z^2 - 3z$