MULTIPLY EACH POLYNOMIAL.

FACTOR EACH POLYNOMIAL COMPLETELY.

1. $(x+5)(x+4) = x^2+9x+20$

2. $(x-7)(x-4) = x^2-11x+28$

3. $(x-4)(x+6) = x^2+2x-24$

4. $(x+9)(x-8) = x^2+x-72$

5. $(x-12)(x+2) = x^2-10x-24$

6. $(x+15)(x-6) = x^2+9x-90$

7. $(x+7)(x+4) = x^2+11x+28$

8. $(x+8)(x+9) = x^2+17x+72$

9. $(x-5)(x+7) = x^2+2x-35$

10. $(x+5)(x-4) = x^2+x-20$

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

12. $(x-3)^2 = x^2-6x+9$

13. $(x+14)^2 = x^2+28x+196$

14. $(x-11)^2 = x^2-22x+121$

15. $(3x+20)^2 = 9x^2+120x+400$

16. $(2x-15)^2 = 4x^2-60x+225$

17. $(x-15)(x+15) = x^2-225$

18. $(x+8)(x-8) = x^2-64$

19. $(x-7)(x+7) = x^2-49$

20. $(x+5)(x-5) = x^2-25$

21. $x^2+5x+6 = (x+2)(x+3)$

22. $x^2+12x+35 = (x+5)(x+7)$

23. $x^2-8x+15 = (x-3)(x-5)$

24. $x^2+13x+42 = (x+6)(x+7)$

25. $x^2-16x+55 = (x-5)(x-11)$

26. $x^2+5x-24 = (x-3)(x+8)$

27. $x^2-7x-30 = (x+3)(x-10)$

28. $x^4-9x^2+20 = (x+2)(x-2)(x^2-5)$

29. $x^2-22x+105 = (x-15)(x-7)$

30. $x^2+12x+36 = (x+6)^2$

31. $x^2-24x+144 = (x-12)^2$

32. $x^2+16x-36 = (x-2)(x+18)$

33. $x^2-6x-16 = (x+2)(x-8)$

34. $4x^2+20x+25 = (2x+5)^2$

35. $25x^2-30x+9 = (5x-3)^2$

36. $x^2-16 = (x+4)(x-4)$

37. $x^2-64 = (x+8)(x-8)$

38. $x^2-81 = (x+9)(x-9)$

39. $9x^2-169 = (3x+13)(3x-13)$

40. $49x^2-16y^2 = (7x+4y)(7x-4y)$

MULTIPLY EACH POLYNOMIAL.

FACTOR EACH POLYNOMIAL COMPLETELY.

41. $3x(12x+5) = 36x^2+15x$

42. $2x(x-14) = 2x^2-28x$

43. $5x(x^2+5x+6) = 5x^3+25x^2+30x$

44. $(3x+1)(x-8) = 3x^2-23x-8$

45. $(4x-1)(2x+2) = 8x^2+6x-2$

46. $(3x+5)(x-6) = 3x^2-13x-30$

47. $(x+7)(2x+3) = 2x^2+17x+21$

48. $(x-8)(4x+3) = 4x^2-29x-24$

49. $(2x-5)(2x+7) = 4x^2+4x-35$

50. $(3x+2)(5x-4) = 15x^2-2x-8$

51. $(6x-1)(9x+2) = 54x^2+3x-2$

52. $(2x-3)^2 = 4x^2-12x+9$

53. $(4x+1)^2 = 16x^2+8x+1$

54. $(3x-1)^2 = 9x^2-6x+1$

55. $(3x+7)^2 = 9x^2+42x+49$

56. $(5x-9)^2 = 25x^2-90x+81$

57. $(3x-5)(3x+5) = 9x^2-25$

58. $(5x-8)(5x+8) = 25x^2-64$

59. $(3x-7)(3x+7) = 9x^2-49$

60. $(4x+5)(3x-8) = 12x^2-17x-40$

61. $2x^2-5x-3 = (2x+1)(x-3)$

62. $2x^2+3x-35 = (x+5)(2x-7)$

63. $8x^2-40x+50 = 2(2x-5)^2$

64. $4x^2+4x+1 = (2x+1)^2$

65. $6x^2+17x+12 = (3x+4)(2x+3)$

66. $9x^2-12x+4 = (3x-2)^2$

67. $2x^2-12x+18 = 2(x-3)^2$

68. $3x^2-24x+45 = 3(x-3)(x-5)$

69. $15x^2-28x+5 = (3x-5)(5x-1)$

70. $3x^2+5x-2 = (3x-1)(x+2)$

71. $5x^2-20x+15 = 5(x-1)(x-3)$

72. $2x^2+7x+3 = (2x+1)(x+3)$

73. $4x^2-21x+5 = (4x-1)(x-5)$

74. $4-12x+9x^2 = (2x-2)^2$

75. $20+7x-6x^2 = -(3x+4)(2x-5)$

76. $64x^2-16 = 16(2x+1)(2x-1)$

77. $x^4+4x^2+4 = (x^2+2)^2$

78. $3x^3+9x^2-12 = 3(x+1)(x-1)(x^2+4)$

79. $2x^4+9x^2-18 = (2x^2-3)(x^2+6)$

80. $8x^2-26xy+21y^2 = (2x-2y)(4x+7y)$

Expand and simplify:

Fully factor:

81. $2(x+3)(3x-7) = 6x^2+4x-42$

82. $3(4x-1)^2-8(x^2-2) = 40x^2-24x+15$

83. $x^4-625 = (x^2+25)(x+5)(x-5)$

84. $2x^3-20x^2+32x = 2x(x-2)(x-8)$