

Concept and Vocabulary Check:

2. $(A + B)(A - B) =$ _____. The product of the sum and the difference of the same two terms is the square of the first term _____ the square of the second term.

3. $(A + B)^2 =$ _____. The square of a binomial sum is the first term _____ plus 2 times the _____ plus the last term _____.

4. $(A - B)^2 =$ _____. The square of a binomial difference is the first term squared _____ 2 times the _____ plus the last term _____.

Practice Exercises:

In exercises 1 - 23, use the FOIL method to find each product. Express the product in descending powers of the variable.

1. $(x + 4)(x + 6)$

15. $(5 - 3y)(6 - 2y)$

5. $(2x - 3)(x + 5)$

17. $(5x^2 - 4)(3x^2 - 7)$

7. $(4y + 3)(y - 1)$

19. $(6x - 5)(2 - x)$

9. $(2x - 3)(5x + 3)$

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

13. $(7 + 3x)(1 - 5x)$

In exercises 25 - 43, use the rule for finding the product of the sum and difference of two terms.

25. $(x + 3)(x - 3)$

35. $\left(2x + \frac{1}{2}\right)\left(2x - \frac{1}{2}\right)$

27. $(3x + 2)(3x - 2)$

37. $(y^2 + 1)(y^2 - 1)$

29. $(3r - 4)(3r + 4)$

39. $(r^3 + 2)(r^3 - 2)$

31. $(3 + r)(3 - r)$

41. $(1 - y^4)(1 + y^4)$

33. $(5 - 7x)(5 + 7x)$

43. $(x^{10} + 5)(x^{10} - 5)$

In exercises 45 - 61, multiply using the rules for the square of a binomial.

45. $(x + 2)^2$

51. $(3y - 4)^2$

47. $(2x + 5)^2$

53. $(4x^2 - 1)^2$

49. $(x - 3)^2$

55. $(7 - 2x)^2$

57. $(2x + \frac{1}{2})^2$

59. $(4y - \frac{1}{4})^2$

61. $(x^8 + 3)^2$

87. Draw the figure for (87) on page 366 then find the area of the shaded region of that figure. Write the answer as a polynomial in descending powers of x .

95. Multiply by the method of your choice: (Hint, using the product of a sum and difference of two binomials first makes this easier if you can see it.)

$$[(x + 3) - y][(x + 3) + y]$$