Name _____

Multiplying Binomials
Special Patterns

Vocabulary

Provide an example of each term below.

1. FOIL pattern

2. square of a binomial sum

3. square of a binomial difference

Use the FOIL pattern to calculate each product.

4. $(x + 6)(x + 3)$

5. $(x + 4)(x + 5)$

6. $(x - 1)(2x + 4)$

7. $(3x - 7)(x + 2)$

8. $(5x - 1)(x - 4)$

9. $(x - 8)(6x - 2)$

10. $(x - 10)(x + 4)$

11. $(a + b)(c + d)$

12. Describe how the coefficients of each term in the product is related to the coefficients of the binomials.

Use the FOIL pattern to calculate the square of each binomial sum.

14. $(x+3)^2$

15. $(x+4)^2$

16. $(x+10)^2$

17. $(x+8)^2$

18. $(2x+3)^2$

19. $(3x+4)^2$

20. $(5x+2)^2$

21. $(a+b)^2$

22. Describe how the coefficients of each term in the product is related to the coefficients of the binomial.

Use the FOIL pattern to calculate the square of each binomial difference.

23. $(x-2)^2$

24. $(x-1)^2$

25. $(x-6)^2$

26. $(3x-4)^2$

27. $(2x-9)^2$

28. $(a-b)^2$

29. Describe how the coefficients of each term in the product is related to the coefficients of the binomial.

Use the FOIL pattern to calculate each product.

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

31. $(x+5)(x-5)$

32. $(x-8)(x+8)$

33. $(x-10)(x+10)$

34. $(3x+1)(3x-1)$

35. $(5x+2)(5x-2)$

36. $(2x-3)(2x+3)$

37. $(a+b)(a-b)$

38. Why are there only 2 terms in the final product of these problems?

What conditions must exist for this to happen?