4.4 Factoring Quadratic Expressions

A. Factoring - Opposite of FOIL and Distribution
- Commonly Used in Solving Higher Degree Equations

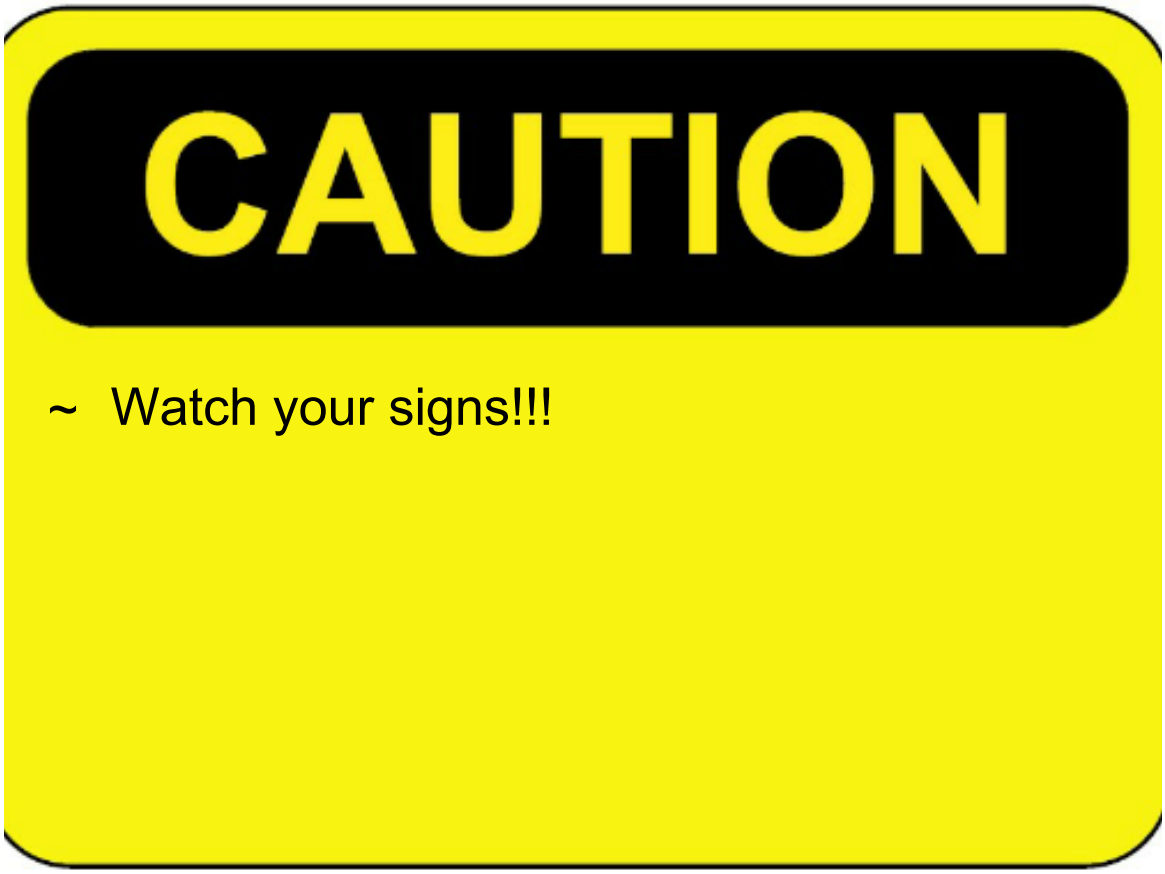
Do NOT yell out the connection.

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

What is the connection?

B. Steps

1. "undistribute" - GCF
2. "unFOIL"



C. Examples - Factor completely.

1. $2x^2 + 10x - 12$

$= 2(x^2 + 5x - 6)$

$= 2(x + 6)(x - 1)$

Does order matter for multiplication?

How can you check your work without re-doing the steps?

2. $3x^2 - 9x - 30$

Pull

3. $5x^2 - 55x + 50$

Pull

4. $-x^2 - 9x - 18$

Pull

4. $4x^2 + 12$

Pull

p. 221 #14-37

Factor each expression.

14. $x^2 + 3x + 2$

15. $x^2 + 5x + 6$

16. $x^2 + 7x + 10$

17. $x^2 + 10x + 16$

18. $y^2 + 15y + 36$

19. $x^2 + 22x + 40$

20. $x^2 - 3x + 2$

21. $-x^2 + 13x - 12$

22. $-r^2 + 11r - 18$

23. $x^2 - 10x + 24$

24. $d^2 - 12d + 27$

25. $x^2 - 13x + 36$

26. $x^2 - 5x - 14$

27. $-x^2 - x + 20$

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

29. $c^2 + 2c - 63$

30. $x^2 + 10x - 75$

31. $-t^2 + 7t + 44$

Find the GCF of each expression. Then factor the expression.

32. $3a^2 + 9$

33. $25b^2 - 20b$

34. $x^2 - 2x$

35. $5t^2 - 5t - 10$

36. $14y^2 + 7y - 21$

37. $27p^2 - 9p + 18$