

12.3 – FACTORING POLYNOMIALS

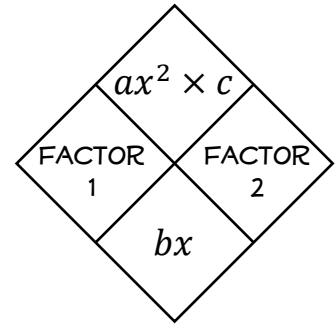
❖ Factoring Trinomials: $ax^2 + bx + c$

THE BOX METHOD ONLY WORKS IF YOU HAVE FACTORED OUT ANY COMMON FACTORS FIRST!

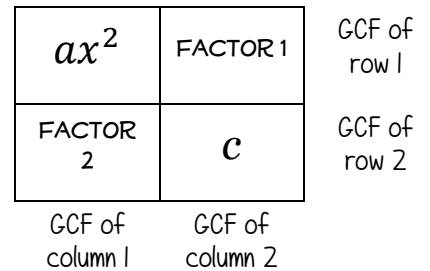
➤ **THE BOX METHOD**

1. Multiply the first and last terms: $ax^2 \times c$
2. Find the factors that multiply to be the product (in step 1) and that add to be the middle term: bx

Organize this information with an X-box →

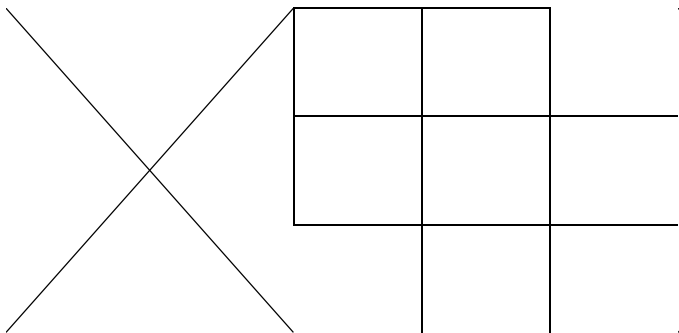


3. Draw a 2×2 square
4. Put the first term of the trinomial ax^2 in the upper-left corner and the constant term, c , in the lower-right corner.
5. Put the factors (from step 2) in the two remaining squares.
6. Find the GCF of each row & each column
7. Write the result as a product of two binomials.

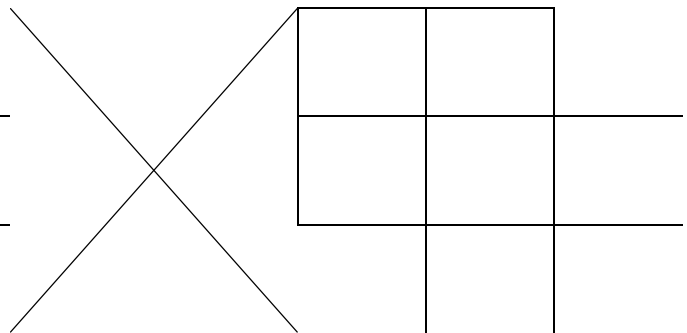


Examples:

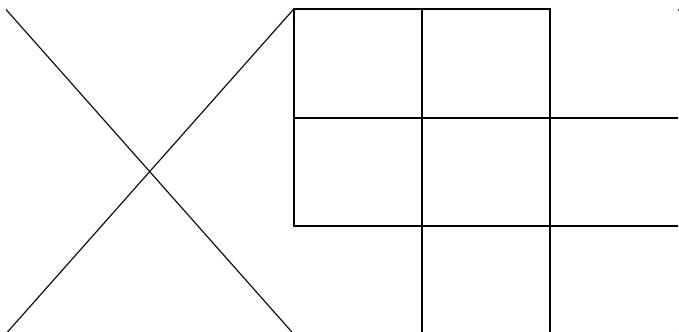
1. $x^2 + 9x + 20$



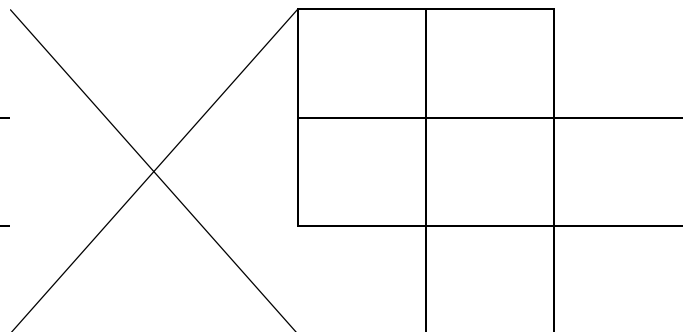
2. $d^2 + 5d - 6$



3. $w^2 - 10w + 16$



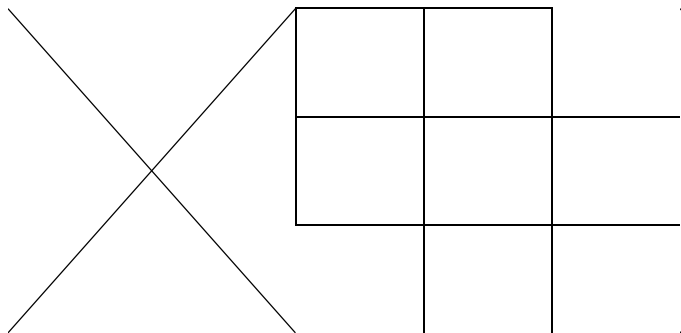
4. $n^2 + 5n - 24$



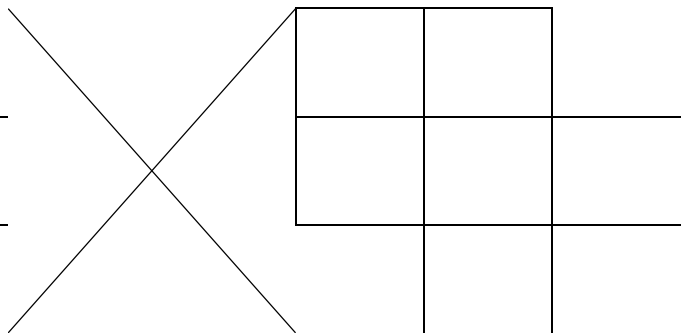
Notes: Lessons 12.3 – Factoring Polynomials

Examples for Day 2:

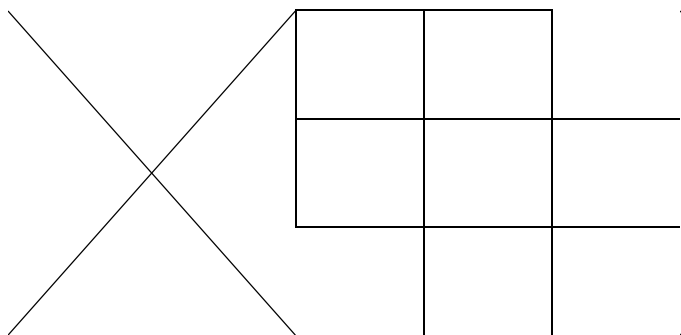
5. $-20 + 9b - b^2$



6. $4x^3 + 22x^2 + 24x$



7. $2w^2 - 3w - 5$



8. $3m^2 - 8m - 3$

