

Why does the criss-cross method work?

$$ax^2 + bx + c \rightarrow \text{to be factored.}$$

↓
if this was the result of say,

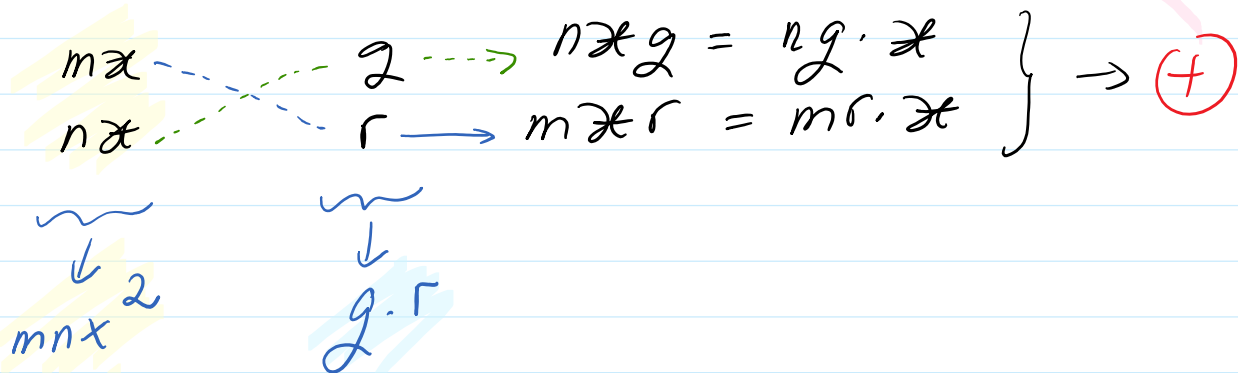
$$(mx + g)(nx + r)$$

after opening the brackets we get

$$mx \cdot nx + m \cdot r \cdot x + g \cdot n \cdot x + gr$$

$$\underbrace{m \cdot n}_2 x^2 + (m \cdot r + gn) \cdot x + gr$$

we criss cross this as



In other words, the criss-cross maps the expression into something that reverse-engineers the brackets.