Here is what Ryan sent out in class via the chat feature to explain how to determine the signs of the binomials when factoring a trinomial:

"Look at the second sign of the original equation. if the second sign is positive, the signs of the factored form are the same, and it is whatever the first sign is in the original. if the second sign in the original equation is negative, then the factored signs are a positive and a negative"

Here are some diagrams that may be helpful:

$ax^2+bx+c \rightarrow (\square+\square)(\square+\square)$

$ax^2-bx+c \rightarrow (\square-\square)(\square-\square)$

$ax^2+bx-c \rightarrow (\square+\square)(\square-\square)$

$ax^2-bx-c \rightarrow (\square+\square)(\square-\square)$