Factoring Trinomials when a = 1: $ax^2 + bx + c$

1) **Make sure the trinomial is in standard form**
2) **Always check for a GCF first**
3) **If there is no GCF, then follow the sign rules:**
   - If the last sign is _positive_, then the signs will be the _same_ which is two of the sign that came first

     +   + ___, +   +

     -    + ___, -   -

   - If the last sign is _negative_, then the signs will ALWAYS be _different_ and the bigger number goes with the first sign you see in the original problem

     +   - ___, +   - ; bigger number goes with plus sign

     -    - ___, +   - ; bigger number goes with minus sign

4) **Find the factors of the constant (the number only) that add or subtract to give the coefficient of x (the middle number). The last sign tells you to add or subtract.**

   To find the factors of the constant, use the TI 36XPRO calculator. Use the table button and choose option 2 and hit enter. Type in the number and divide by x

5) **Check your answer by redistributing**

   Example 1: $x^2 + 10x + 16$ Which factors of 16 add to give 10?

   Example 2: $x^2 - 12x + 27$ Which factors of 27 add to give 12?

   Example 3: $x^2 + 2x - 24$ Which factors of 24 subtract to give 2?

Example 4: $x^2 - x - 12$ Which factors of 12 subtract to give 1?

Example 5: $x^2 - 3x + 40$ Which factors of 40 add to give 3?

Example 6: $x^2 - 10x + 24$ Which factors of 24 add to give 10?

Example 7: $x^2 + 6x - 40$ Which factors of 40 subtract to give 6?

Example 8: $x^2 + 10x + 9$ Which factors of 9 add to give 10?

Example 9: $x^2 - 11x + 24$ Which factors of 24 add to give 11?

Example 10: $x^2 - 6x - 40$ Which factors of 40 subtract to give 6?