**Basic Rules**

x2 + bx + c

(x \_\_\_\_\_)(x \_\_\_\_\_)

x2 - bx + c

(x \_\_\_\_\_)(x \_\_\_\_\_)

x2 + bx - c

(x \_\_\_\_\_)(x \_\_\_\_\_)

x2 - bx - c

(x \_\_\_\_\_)(x \_\_\_\_\_)

**Factoring by Grouping**

Example 1

x2 – 7x + 10

Step 1: Multiply first and last terms.

Step 2: Find factors that add to middle term.

Step 3: Group and factor out GCF

Step 4: Rearrange into 2 binomials.

Example 2

x2 + 17x + 72

**Box Method**

Example 3

x2 + 4x – 60

|  |  |
| --- | --- |
| First |  |
|   | Last |

Step 1: Multiply first and last terms.

Step 2: Find factors that add to the middle term.

Step 3: Write these terms in the remaining boxes.

Step 4: Factor GCF out of each row & column.

Step 5: Rearrange into 2 binomials.

Example 4

2x2 – 5x - 3