**Types of Factoring**

Before you factor any expression, you must always check for and factor out a

**Greatest Common Factor(GCF)!**

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|  | **Looks Like** | **How to Factor** | **Examples** |
| **GCF (Two Terms)** | ax2 - bx | Factor out what is common to both terms (mentally or list method) | x2 + 5x = x(x + 5)  18x2 – 6x = 6x(3x – 1)  -9x2 – x = -x(9x + 1) |
| **A = 1** | x2 + bx + c | Think of what two numbers multiply to get the c term and add to get the b term (Think of the diamond). You also need to think about the signs:  x2 + bx + c = (x + #)(x + #)  x2 – bx + c = (x - #)(x - #)  x2 – bx – c/x2 + bx – c = (x + #)(x - #) | x2 + 8x + 7 = (x + 7)(x + 1)  x2 – 5x + 6 = (x – 2)(x – 3)  x2 – x – 56 = (x + 7)(x – 8) |
| **A not 1** | ax2 + bx + c | **Area Model/Box Method: 2x2 + 3x - 2** | 9x2 – 11x + 2 = (9x – 2) (x – 1)  2x2 + 15x + 7 = (2x + 1)(x + 7)  3x2 – 5x – 28 = (2x + 7)(x – 4) |
| **Difference of Two Squares** | x2 – c | Both your a and c terms should be perfect squares and since there is no b term, it has a value of 0. You must also be subtracting the a and c terms. Your binomials will be the exact same except for opposite signs.  **Difference of Squares**  a2 – b2 = (a + b)(a – b) | x2 – 9 = (x + 3)(x – 3)  x2 – 100 = (x + 10)(x – 10) 4x2 – 25 = (2x + 5)(2x – 5) |
| **Perfect Square Trinomials** | x2 + bx + c  “c” is a perfect square  “b” is double the square root of c | Factor like you would for when a = 1 | x2 – 6x + 9 = (x – 3)(x – 3)  = (x – 3)2  x2 + 16x + 64 = (x + 8)(x + 8)  = (x + 8)2 |