Name _____ Class _____ Date _____

Reteaching 9-5

Factoring Trinomials of the Type $x^2 + bx + c$

OBJECTIVE: Factoring trinomials of the type $x^2 + bx + c$

MATERIALS: Tiles

Examples

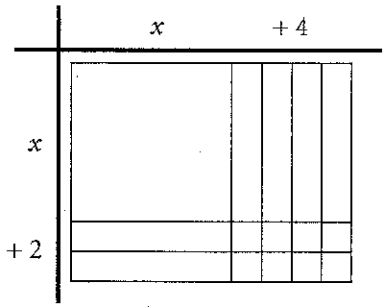
Factor $x^2 + 6x + 8$.

$(x \quad)(x \quad)$ ← **Write factors of x^2, the first term of the trinomial, at the beginning of each set of parentheses. Note that the coefficient of x^2 is 1.**

$+1$ and $+8$ $\quad -1$ and -8

$+2$ and $+4$ $\quad -2$ and -4 ← **List pairs of numbers that are factors of +8, which is the constant term of the trinomial. Choose the pair of factors that add to equal +6, the coefficient of the middle term of the trinomial.**

$(x + 2)(x + 4)$ ← **Write those two factors, with their signs, at the end of each set of parentheses.**



← **The trinomial $x^2 + 6x + 8$ represents the area of a rectangle with side of length $(x + 4)$ and $(x + 2)$.**

Factor $x^2 + 4x - 21$.

$(x \quad)(x \quad)$

-1 and $+21$ $\quad +1$ and -21 ← **List pairs of numbers that are factors of −21.**

-3 and $+7$ $\quad +3$ and -7

$(x - 3)(x + 7)$ ← **Choose the pair of factors that add to equal +4.**

Exercises

Factor each expression.

1. $y^2 + 11y + 18$ **2.** $x^2 - 8x + 15$ **3.** $x^2 - 11x + 18$

4. $y^2 - 5y + 4$ **5.** $x^2 + 6x + 8$ **6.** $y^2 - 8y + 12$

7. $r^2 + 13r + 12$ **8.** $x^2 - 16x + 39$ **9.** $x^2 - 10x + 16$

10. $x^2 - x - 2$ **11.** $x^2 - 4x - 32$ **12.** $x^2 - 7x - 18$

13. $x^2 + 7x + 10$ **14.** $x^2 - 11x + 24$ **15.** $x^2 + 16x + 63$