MBF 3C: UNIT 5 – Factoring and Expanding with Quadratics
Lesson 5: Factoring – part 2

Factoring Trinomials of the form $y = ax^2 + bx + c$, where a is a common factor.

This time we will take the common factor out FIRST, then continue to factor like we did last lesson.

Examples: Factor Fully.

1) $-4x^2 + 24x + 108$ 2) $5x^2 - 20x + 20$ 3) $y = -3^{x2} + 6x + 9$

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Name :
Date :

Factoring Quadratic Expressions

1. Fill in the missing numbers.

   (a) $(x - 3)(x + 4) = x^2 + x + \_\_\_\_$

   (b) $(x - 6)(x + 2) = x^2 + \_\_\_\_\_x + \_\_\_\_$

   (c) $(x + \_\_\_\_)(x + 2) = x^2 + 5x + 6$

   (d) $(x + 3)(x + \_\_\_) = x^2 - 6x - 27$

   (e) $(x + \_\_\_\_)(x + \_\_\_\_) = x^2 + 9x + 14$

2. Factor each expression.

(a) $x^2 - 3x - 4$	(b) $x^2 - 11x + 28$	(c) $x^2 + 7x + 12$
(d) $x^2 - 4x - 32$	(e) $x^2 - 13x + 42$	(f) $x^2 - 4x + 4$

3. Connecting to prior lessons, by factoring standard form, we can change a parabola's equation into factored form!

   Given the equation: $y = x^2 + 8x + 15$

   (a) state the y – intercept _____

   (b) write the expression in factored form $y =$_____

   (c) the zeros of the parabola are _____ and _____

   (d) the vertex of the parabola is _____
   (hint: the vertex is located halfway between the zeros)

   (e) the axis of symmetry of the parabola is _____