MFM2PI – *Unit 6: Quadratic Expressions – Lesson 2*  Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Common Factoring**

1. **Recall: Binomial Expansion**

Yesterday, we looked at three different scenarios:

*Monomials by Monomials* *Monomials by Binomials* *Binomials by Binomials*

(r2)(r3) (v)(2v – 3) (b – 1)(3b + 5)

In each of these scenarios, we *expanded* our original values into a single polynomial product.   
Today, however, we’re going to perform that same process in reverse: we’re going to take a  
*single polynomial* *product* and *break it down* into its *factors*. The process is called ***factoring***.

1. **Common Factoring**

There are many different types of factoring, and the first we will learn is common factoring. ***Common factoring*** involves finding the “greatest common factor” – a value that multiplies evenly into all terms in a polynomial.

How to Common Factor a Polynomial: *Worked Example:*

1. Examine all terms in your polynomial and find the 5x3 + 10x  
   **largest number/largest variable** combination that is  
   **common to all** the terms (the “greatest common factor”)
2. Write down the greatest common factor (the largest number/  
   variable combination) on the next line
3. After the common factor, write down an empty set  
   of brackets (this will contain our other factor!)
4. Inside the empty brackets, write down what remains  
   from each original term once the common factor has  
   been factored out
5. **Practice Makes Perfect**

Let’s complete some common factoring below!

a) 2y3 + 6y + 8 b) 9a – 3a2 + 3a3 c) 9r – 18h4

d) b4 + 2b3 + 3b e) 15g – 10g3 f) 20x + 10x2 – 10

**HW: *Unit 6 Lesson 2 Worksheet***