MFM2PI – *Unit 6: Quadratic Expressions – Lesson 5*  Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Factoring Differences of Squares**

1. **What is a Difference of Squares?**

A **difference of squares** is a special kind of quadratic expression: it only has two terms! You can recognize a difference of squares using three cues:

***A Sample Difference of Squares***

x2 – 49

There must be only two terms

Each term must be a perfect square (which means  
squared variables or numbers like 4, 9, 16, 25, 36, etc.)

The two terms must be separated by a “ – “ sign  
(that’s why it’s called the “difference” of squares!)

1. **Factoring Differences of Squares**

How to Factor a Difference of Squares: *Worked Example:*

1. Find the square root of both the first and second terms y2 – 25
2. Write the square root of the first term at the front of  
   both binomials
3. Write the square root of the second term at the back of  
   both binomials
4. Separate the terms in the first binomial with “ + ” and  
   separate the terms in the second with “ – “

Let’s try some together!

a) r2 – 9 b) a2 – 100 c) h2 – 1

Sometimes there will be a ***number other than one*** in front of your variable term – if it’s a perfect square, go ahead and factor it!

d) 9b2 – 4 e) 4f2 – 81 f) 16u2 – 49  
  
  
  
  
  
  
Sometimes you will need to ***common factor*** both terms before you can factor the difference of squares!

h) 2p2 – 8 i) 5m2 – 80 j) 12k2 – 27

**HW: *Unit 6 Lesson 5 Worksheet A***