Name: _____ **Precalculus Unit 1, Lesson 5**

Aim: Practice with Special Types of Factoring

I. Do Now: Factor completely.

1. $y^3 - 125$

2. $3x^3 + 2x^2 - 15x - 10$

3. $2(x+1)(x-3)^2 - 3(x+1)^2(x-3)$

II. More Practice. (Factor by Grouping, Polynomials with Repeated Factors, Sum/Diff. of Cubes)

4. $(9x+2)(3x-4) - (3x-4)^2$

5. $6(5x-4)^2(x-3) + 2(5x-4)(x-3)^2$

6. $(x-2)^3 - 64$

7. $64n^3 + 27$

8. Given the cubic equation: $x^3 - 10x^2 + 11x + 70 = 0$, if 7 is one root (solution), find all roots.

9. Divide:

$$x-1 \overline{)\, x^3 - 3x^2 + 5x + 1}$$

*10. Factor completely: $x^6 - y^6$

HW5
MPS21 HW Sheet #1: 42, 46, 52, 56, 58, 61, 64, 65, 81
MPS21 HW Sheet #2: 5, 19, 21