NAME _____

This day's problem: (II: Find a new rule for factoring)
Look for the patterns and rules as you use algebra to go from one column to another.

I) Equation	II) Factored Form	III) notes
$x^3 - 6x^2 + 5x$	$x(x - 5)(x - 1)$	common factor first -1*-5 = 5, -1+-5 = -6
	$(x^2 - 2)(x - 3)$	
	$(x - 4)(x^2 + 4x + 16)$	$x^3 + 4x^2 + 16x$ (distribute x) $- 4x^2 - 16x - 64$ (distribute 4)
	$(x - 3)(x^2 - 3x + 9)$	
	$(x - 2)(x^2 + 2x + 4)$	
	$(x^2 - 5)(x + 2)$	
$5x^3 + 20x^2 - x - 4$		
$x^4 - 16$		
$64x^3 - 1$		
$x^3 - 8$		
$x^3 + 27$		

Notes (what do you notice?)

To factor $x^3 - 125$

	x^2		25
x			
-5			

$x^3 + 216$

	x^2		36
x			
6			

Notes:

$A^3 - B^3 =$

$A^3 + B^3 =$