MAT0028 ~ Lesson 35

Work the following examples as you listen to the recorded lecture.

Factoring Binomials (Cubes)

Learn the cubes:

Factor	1	2	3	4	5
Cube	1	8	27	64	125

Cubes:

Problem type: $a^3 + b^3$ and $a^3 - b^3$ (Where *a* and *b* are numbers or unknowns.)

These are your formulas and sign rules:

Sum of Cubes: $a^3 + b^3 = (a + b)(a^2 - ab + b^2)$

Difference of Cubes: $a^3 - b^3 = (a - b)(a^2 + ab + b^2)$

Notice: You have 3 signs.

1. **The first sign matches the problem.**
2. **The second sign is the opposite of the problem.**
3. **The third sign is always positive.**

Example 1: $x^3 + 8$	Sum of Cubes problem $a^3 + b^3 = (a + b)(a^2 - ab + b^2)$
( ) ( )	Step 1: Set signs for the factors.
a = _____ *b* = _____	Step 2: Find the cube root of a^3 and b^3.
a^2 = _____ b^2 = _____	Step 3: Square *a* and *b*.
$a \cdot b$ = _____	Step 4: Multiply *a* times *b*.
	Step 5: Fill in the fields for your formula..
	Step 6: Multiply to check.