

Section 6.3 (The Sum and Difference of Cubes)

The objective for this section is to:

- Factor a polynomial that is the sum or difference of cubes

Sum and Difference of Cubes

$$A^3 + B^3 = (A + B)(A^2 - AB + B^2)$$

$$A^3 - B^3 = (A - B)(A^2 + AB + B^2)$$

Think MOP (match, opposite, positive).

1.) $x^3 + 64$

2.) $x^3 - 27$

3.) $64 - 125x^3$

4.) $a^3 + \frac{1}{8}$

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5.) $2y^4 - 128y$

6.) $t^6 + 64y^6$

7.) $2x^{3a} + 16y^{3b}$

8.) $(x+5)^3 + (y-5)^3$

9.) $8s^9 - 64$

10.) $5x^3y^6 - \frac{5}{8}$