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.) \(a^3 + \frac{1}{8}\)
Section 6.3 (The Sum and Difference of Cubes)

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

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

7.) $2x^3 + 16y^3$

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

9.) $8s^9 - 64$

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