

## Sum – Difference 2 Cubes

$$a^3 \pm b^3 = (a \pm b)(a^2 \mp ab + b^2)$$

There are a couple of things I would like you to note:

1. The pattern I want you to see is if I have the sum of two cubes, then the binomial factor is also a sum. If I have the difference of two cubes, the binomial factor is also a difference.
2. The sign of the linear term in the trinomial is opposite of the binomial being factored.

Factor completely.

A  
1.  $x^3 - 8$

B  
 $x^3 + 8$

2.  $x^3 - 27$

$x^3 + 27$

3.  $y^3 - 64$

$y^3 + 64$

4.  $x^3 - 125$

$t^3 + 125$

5.  $8x^3 - 125$

$27x^3 + 64y^3$

6.  $125x^3 - 64y^3$

$8x^3 + 27y^3$