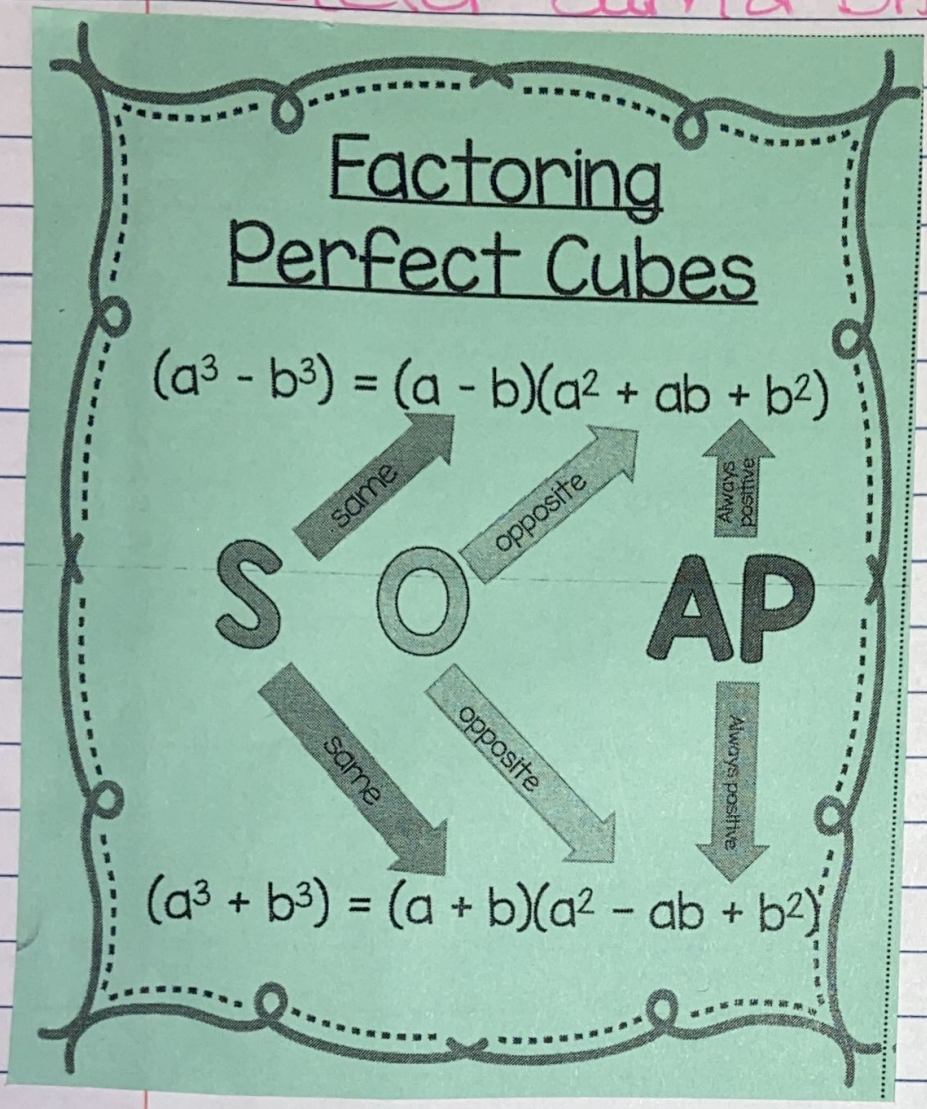
Factor Sum or Difference of Cubes



Perfect Cubes

$1^3 = 1$
$2^3 = 8$
$3^3 = 27$
$4^3 = 64$
$5^3 = 125$
$6^3 = 216$
$7^3 = 343$
$8^3 = 512$
$9^3 = 729$
$10^3 = 1000$

$a = \sqrt[3]{1st\ term}$
$b = \sqrt[3]{2nd\ term}$

1. $27x^3 - 8$ $a = \sqrt[3]{27x^3} = 3x$ $b = \sqrt[3]{8} = 2$

$(a\ \underset{S}{-}\ b)(a^2\ \underset{O}{+}\ ab\ \underset{AP}{+}\ b^2)$

$(3x - 2)((3x)^2 + 3x(2) + (2)^2)$

$(3x - 2)(9x^2 + 6x + 4)$

2. $125a^3 + 64$

$a = \sqrt[3]{125a^3}$
$a = 5a$
$b = \sqrt[3]{64}$
$b = 4$

$(5a + 4)((5a)^2 - (5a)(4) + (4)^2)$

$(5a + 4)(25a^2 - 20a + 16)$

S O AP

GCF 1st!

3. $4000x^3 - 4$

$4(1000x^3 - 1)$

$4(10x - 1)(100x^2 + 10x + 1)$

$a = \sqrt[3]{1000x^3}$ $b = \sqrt[3]{1}$
$a = 10x$ $b = 1$