ALGEBRA II
HOMEWORK #1-4
FACTORING PERFECT CUBES

✱ Always look for a GCF first!

1. Factor $3x^3+192$.

S O AP

$3(x^3+64) = \boxed{3(x+4)(x^2-4x+16)}$

a b a^2 $a\cdot b$ b^2

$a=x \quad b=4$

2. Factor $5x^3-320x^6$.

S O AP

$5x^3(1-64x^3) = \boxed{5x^3(1-4x)(1+4x+16x^2)}$

$a=1 \quad b=4x$

$a^2=1 \quad b^2=16x^2$

3. Factor m^4-9m^2+8.

$-8 \quad 8 \quad -1 \quad -9$

3 terms → TRAM

$m^4-8m^2-1m^2+8$

$m^2(m^2-8)-1(m^2-8)$

$(m^2-8)(m^2-1)$

$(m^2-8)(m+1)(m-1)$

4. Factor $2b^2+17b+21$.

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$2b^2+3b+14b+21$

$b(2b+3)+7(2b+3)$

$(2b+3)(b+7)$

5. Factor $12x^5-27x$.

$3x(4x^4-9)$

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

① GCF

② DOTS