

Name: _____

UNIT 1

Date: _____

LESSON 8

AIM: HOW DO WE FACTOR THE SUM AND DIFFERENCE OF CUBES?

Do-Now:

a) $1^3 =$ b) $\sqrt[3]{27} =$ c) $\sqrt{64x^{12}} =$ d) $\sqrt[3]{64x^{12}} =$ e) $(4x^3)^2 =$

$2^3 =$

$3^3 =$

$4^3 =$

$5^3 =$

$6^3 =$

$10^3 =$

DIFFERENCE of Two Cubes (DOCS):

$$a^3 - b^3 = (a - b)(a^2 + ab + b^2)$$

1. Factor: $x^3 - 64$

2. Factor: $x^6 - 8$

SUM of Two Cubes (SOCS):

$$a^3 + b^3 = (a + b)(a^2 - ab + b^2)$$

3. Factor: $x^3 + 125$

4. Factor: $8x^3 + 27$

“S. O. A. P”

PRACTICE- Factor completely:

5. Factor: $c^3 - x^{12}$

6. Factor: $64x^{15} + 1$

7. Factor: $2x^3 - 250y^3$

8. Factor: $x^5 - x^3 - 8x^2 + 8$

9. Factor: $24a^4 + 3ax^6$

10. Factor: $x^7 + x^6m - 27x - 27m$

WHAT STUCK WITH YOU?!

You decide: Difference of Two Squares or Difference of Two Cubes? Explain and factor it.

$$x^8 - 64$$