**PreCalculus Name**

**Factoring Sum and Differences of Cubes Notes Review Date:**

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| **Sum of Cubes:**$$a^{3}+b^{3}=(a+b)(a^{2}-ab+b^{2})$$ | **Difference of Cubes:**$$a^{3}-b^{3}=(a-b)(a^{2}+ab+b^{2})$$ |

**Factor the following:**

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| Example 1:$$x^{3}-27$$ | You Try:$$x^{3}+125$$ |
| Example 2:$$8x^{3}+27$$ | **You Try:**$$-27u^{3}+125$$ |

**Practice:**

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| 1. $a^{3}+64$
 | 1. $125-x^{3}$
 |
| 1. $64x^{3}+27$
 | 1. $x^{3}-216y^{3}$
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| **Warm-Up** |
| 1. **Find the difference quotient and simplify your answer:**

$f\left(x\right)=x^{2}-3x+2$ **,** $\frac{f\left(x+h\right)-f(2)}{h}$ |

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| **Wrap-Up** |
| 1. $m^{3}+64n^{3}$
 | 1. $27a^{3}-1$
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| **Name: Date:**  |