

Name : \_\_\_\_\_

## Factors: Algebraic Identities

ES3

Factorize each expression using algebraic identities.

1)  $y^3 - z^3$

2)  $w^3 + \frac{1}{x^3}$

3)  $g^3h^3 - 27$

5)  $u^3 + \frac{1}{v^3}$

7)  $t^3 + 343$

9)  $n^3 - 216$

10)  $c^3d^3 + 8$

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**Factors: Algebraic Identities**

Factorize each expression using algebraic identities.

1)  $y^3 - z^3$

$(y - z)(y^2 + yz + z^2)$

2)  $w^3 + \frac{1}{x^3}$

$\left(w + \frac{1}{x}\right)\left(w^2 - \frac{w}{x} + \frac{1}{x^2}\right)$

3)  $g^3h^3 - 27$

$(gh - 3)(g^2h^2$

$abc + c^2)$

5)  $u^3 + \frac{1}{v^3}$

$\left(u + \frac{1}{v}\right)\left(u^2 - \frac{u}{v} + \frac{1}{v^2}\right)$

$\cdot 25)$

7)  $t^3 + 343$

$(t + 7)(t^2 - 7t$

$+ q^2)$

9)  $n^3 - 216$

$(n - 6)(n^2 + 6n + 36)$

10)  $c^3d^3 + 8$

$(cd + 2)(c^2d^2 - 2cd + 4)$

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