Name

Factor Polynomials (Order 3) - Sum of Cubes (With Hint), Coefficient N

1 Use the sum of cubes formula to factor this polynomial

$216n^3 - 216$

hint:

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

$a = 6n$

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

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

2 Use the sum of cubes formula to factor this polynomial

$125p^3 - 64$

hint:

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

$a = 5p$

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

B $(5p + 125)(25p^2 - 20p + 16)$

3 Use the sum of cubes formula to factor this polynomial

$216w^3 + 27$

hint:

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

$a = 6w$

A $(3w - 3)(36w^2 + 18w - 9)$

B $(6w + 3)(36w^2 - 18w + 9)$

4 Use the sum of cubes formula to factor this polynomial

$8z^3 - 216$

hint:

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

$a = 2z$

A $(2z - 6)(4z^2 + 12z - 36)$

B $(2z + 6)(12z^2 - 4z + 36)$

5 Use the sum of cubes formula to factor this polynomial

$125w^3 + 64$

hint:

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

$a = 5w$

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

B $(4w + 25)(25w^2 - 20w + 16)$

6 Use the sum of cubes formula to factor this polynomial

$64z^3 - 27$

hint:

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

$a = 4z$

A $(4z + 3)(16z^2 - 12z + 9)$

B $(4z - 3)(16z^2 + 12z - 9)$

7 Use the sum of cubes formula to factor this polynomial

$216w^3 - 216$

hint:

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

$a = 6w$

A $(6w + 36)(36w^2 - 36w + 36)$

B $(6w - 6)(36w^2 + 36w - 36)$

8 Use the sum of cubes formula to factor this polynomial

$125n^3 - 125$

hint:

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

$a = 5n$

A $(5n + 5)(25n^2 - 25n + 25)$

B $(5n - 5)(25n^2 + 25n - 25)$