



Algebra, Factoring, Binomial

Name _____

Date _____

Factor these binomials by the sum of cubes formula

(1) $216h^6 + 125v^3$

(2) $27h^6 + 1000x^6$

(3) $216a^3 + 125$

(4) $1000b^6 + 27z^{12}$

(5) $64b^{15} + 729c^{15}$

(6) $64z^9 + 343b^9$

(7) $216x^9 + w^6$

(8) $27w^{12} + 125h^9$

(9) $27u^6 + 512n^6$

(10) $k^6 + u^9$

(11) $216n^6 + 343c^9$

(12) $216q^9 + 343k^{12}$



Answers

Factor these binomials by the sum of cubes formula

(1) $216h^6 + 125v^3$

$(6h^2 + 5v)(36h^4 - 30h^2v + 25v^2)$

(3) $216a^3 + 125$

$(6a + 5)(36a^2 - 30a + 25)$

(5) $64b^{15} + 729c^{15}$

$(4b^5 + 9c^5)(16b^{10} - 36b^5c^5 + 81c^{10})$

(7) $216x^9 + w^6$

$(6x^3 + w^2)(36x^6 - 6x^3w^2 + w^4)$

(9) $27u^6 + 512n^6$

$(3u^2 + 8n^2)(9u^4 - 24u^2n^2 + 64n^4)$

(11) $216n^6 + 343c^9$

$(6n^2 + 7c^3)(36n^4 - 42n^2c^3 + 49c^6)$

(2) $27h^6 + 1000x^6$

$(3h^2 + 10x^2)(9h^4 - 30h^2x^2 + 100x^4)$

(4) $1000b^6 + 27z^{12}$

$(10b^2 + 3z^4)(100b^4 - 30b^2z^4 + 9z^8)$

(6) $64z^9 + 343b^9$

$(4z^3 + 7b^3)(16z^6 - 28z^3b^3 + 49b^6)$

(8) $27w^{12} + 125h^9$

$(3w^4 + 5h^3)(9w^8 - 15w^4h^3 + 25h^6)$

(10) $k^6 + u^9$

$(k^2 + u^3)(k^4 - k^2u^3 + u^6)$

(12) $216q^9 + 343k^{12}$

$(6q^3 + 7k^4)(36q^6 - 42q^3k^4 + 49k^8)$