



Algebra, Factoring, Binomial

Name _____

Date _____

Factor these binomials by the difference of cubes formula

(1) $k^6 - 343a^{15}$

(2) $216m^{15} - 343w^{12}$

(3) $8m^{15} - 125d^{12}$

(4) $1000y^3 - c^6$

(5) $64p^3 - 125w^9$

(6) $512b^6 - m^3$

(7) $216c^{12} - 125m^{12}$

(8) $729v^3 - 1000p^9$

(9) $512n^3 - 27t^6$

(10) $1000t^6 - k^{15}$

(11) $8h^3 - 729a^{15}$

(12) $1000q^9 - 343d^{12}$



Answers

Factor these binomials by the difference of cubes formula

(1) $k^6 - 343a^{15}$

$(k^2 - 7a^5)(k^4 + 7k^2a^5 + 49a^{10})$

(3) $8m^{15} - 125d^{12}$

$(2m^5 - 5d^4)(4m^{10} + 10m^5d^4 + 25d^8)$

(5) $64p^3 - 125w^9$

$(4p - 5w^3)(16p^2 + 20pw^3 + 25w^6)$

(7) $216c^{12} - 125m^{12}$

$(6c^4 - 5m^4)(36c^8 + 30c^4m^4 + 25m^8)$

(9) $512n^3 - 27t^6$

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

(11) $8h^3 - 729a^{15}$

$(2h - 9a^5)(4h^2 + 18ha^5 + 81a^{10})$

(2) $216m^{15} - 343w^{12}$

$(6m^5 - 7w^4)(36m^{10} + 42m^5w^4 + 49w^8)$

(4) $1000y^3 - c^6$

$(10y - c^2)(100y^2 + 10yc^2 + c^4)$

(6) $512b^6 - m^3$

$(8b^2 - m)(64b^4 + 8b^2m + m^2)$

(8) $729v^3 - 1000p^9$

$(9v - 10p^3)(81v^2 + 90vp^3 + 100p^6)$

(10) $1000t^6 - k^{15}$

$(10t^2 - k^5)(100t^4 + 10t^2k^5 + k^{10})$

(12) $1000q^9 - 343d^{12}$

$(10q^3 - 7d^4)(100q^6 + 70q^3d^4 + 49d^8)$