

Factoring Sum/Difference of Cubes

Factor Completely.

1) $n^3h - 27h$

$$h(\underbrace{n^3}_{n^3} - \underbrace{27}_3)$$

$$h(n-3)(n^2+3n+9)$$

3) $343b^3 - 125b$

$$b(\underbrace{343b^3}_{7b^3} - \underbrace{125}_5)$$

$$b(7b-5)(49b^2+35b+25)$$

2) $125q^3 + 64q$

$$q(\underbrace{125q^3}_{5q^3} + \underbrace{64}_4)$$

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

4) $64d^3k + 343k$

$$k(\underbrace{64d^3}_{4d^3} + \underbrace{343}_7)$$

$$k(4d+7)(16d^2-28d+49)$$

5) $27c^3 + 216k^3$

$$(3c+6k)(9c^2-18ck+36k^2)$$

6) $125s^3 + 8$

$$(5s+2)(25s^2-10s+4)$$

7) $r^3z + 343z$

$$z(\underbrace{r^3}_{r^3} + \underbrace{343}_7)$$

$$z(r+7)(r^2-7r+49)$$

8) $q^3 - 8q$

$$q(\underbrace{q^3}_{q^3} - \underbrace{8}_2)$$

$$q(q-2)(q^2+2q+4)$$

9) $z^3 + 125d^3$

$$(z+5d)(z^2-5dz+25d^2)$$

10) $64c^3 + 125$

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

11) $d^3 - 64k^3$

$$(d-4k)(d^2+4dk+16k^2)$$

12) $k^3 - 64$

$$(k-4)(k^2+4k+16)$$