

Difference of Two Cubes Worksheet

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The formula for the difference of two cubes is: $a^3 - b^3 = (a - b)(a^2 + ab + b^2)$

Example: $x^3 - 8 = (x - 2)(x^2 + 2x + 4)$ where **a** = x and **b** = 2

Example: $27m^3 - 64p^6 = (3m - 4p^2)(9m^2 + 12mp^2 + 16p^4)$
where **a** = 3m and **b** = 4p²

Practice Exercises:

- 1) Factor: $x^3 - y^3$
- 2) Factor: $g^3 - 27$
- 3) Factor: $y^6 - 8$
- 4) Factor: $125d^3 - 216$
- 5) Factor: $8h^3 - 125b^9$
- 6) Fill in the missing parts: $___ - y^3 = (m - ___)(___ + my + ___)$
- 7) Fill in the missing parts: $27r^6 - ___ = (___ - ___)(___ + 3r^2p + p^2)$
- 8) Fill in the missing parts: $8g^3 - 27m^3 = (___ - ___)(4g^2 + ___ + ___)$
- 9) Fill in the missing parts: $___ - ___ = (d - 4z)(d^2 + 4dz + 16z^2)$
- 10) Fill in the missing parts: $___ - ___ = (3r - 2k^2)(___ + ___ + ___)$