

VISUAL PHYSICS ONLINE

Handwritten mathematical equations on a green background, showing various algebraic and calculus manipulations. The equations include terms like $\frac{P V_m}{R T}$, $\frac{B_2}{V_m}$, $\frac{B_3}{V_m^2}$, and $\frac{b}{V_m^2}$, along with summations and square roots.

REARRANGING EQUATIONS

A very importance and essential skills is to be able to rearrange an equation. This can be difficult but if you follow a well define procedure you will be able to master this skill. Always rewrite the equation with the quantity you want on the **left-hand side** of the equals sign and then perform a series of mathematical operations to both sides of the equation. If you have any difficulties, then do the operations step by step.

Example

Find an expression for T from the equation

$$P = \varepsilon \sigma A (T^4 - T_o^4)$$

Solution

$T = ?$ on left hand side of equation

Rearrange equation step by step

$$\varepsilon \sigma A (T^4 - T_o^4) = P$$

$$(T^4 - T_o^4) = \frac{P}{\varepsilon \sigma A}$$

$$T^4 = T_o^4 + \frac{P}{\varepsilon \sigma A}$$

$$T = \left(T_o^4 + \frac{P}{\varepsilon \sigma A} \right)^{1/4}$$

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If you have any feedback, comments, suggestions or corrections
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