

SUHU DAN KALOR

01.

	C	R	F	K	
Td	100	80	212	373	
Air	↑ 100	↑ 80	↑ 180	↑ 100	
Tb	0	0	32	273	

C = celcius
 R = reamur
 F = fahrenheit
 t_k = suhu dalam kelvin
 t_c = suhu dalam celsius

$$C : R : F = 5 : 4 : 9$$

$$t_k = t_c + 273$$

Contoh :

X	Y	
Tb -20	40	X : Y = 150 : 200
		= 3 : 4
60	?	
		$\frac{4}{3} (60 + 20) + 40 = \dots$

Td 130 240

Sifat termal zat → diberi kalor (panas) →

- Menaikkan suhu
- perubahan dimensi (ukuran)
- Perubahan wujud

02. Muai panjang.

$$\Delta L = L_o \cdot \alpha \cdot \Delta t$$

$$L_t = L_o (1 + \alpha \cdot \Delta t)$$

ΔL = perubahan panjang
 α = koefisien muai panjang
 L_o = panjang mula-mula
 Δt = perubahan suhu
 L_t = panjang saat t°
 ΔA = perubahan luas
 A_o = luas mula-mula

03. Muai luas.

$$\Delta A = A_o \cdot \beta \cdot \Delta t$$

$$A_t = A_o (1 + \beta \cdot \Delta t)$$

β = koefisien muai luas
 ΔV = perubahan volume
 V_o = Volume awal
 γ = koefisien muai volume

04. Muai volume.

$$\Delta V = V_o \cdot \gamma \cdot \Delta t$$

$$V_t = V_o (1 + \gamma \cdot \Delta t)$$

$$\begin{array}{l} \beta = 2 \alpha \\ \gamma = 3 \alpha \end{array} \quad \left. \vphantom{\begin{array}{l} \beta = 2 \alpha \\ \gamma = 3 \alpha \end{array}} \right\} \gamma =$$

Q = kalor
 m = massa
 c = kalor jenis
 → t = perubahan suhu
 H = perambatan suhu

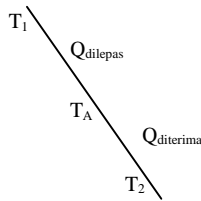
05. $Q = m \cdot c \cdot \Delta t$

06. $Q = H \cdot \Delta t$

07. $H = m \cdot c$

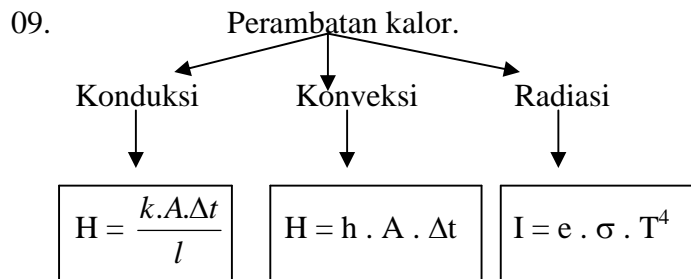
08. Azas Black.

$$Q_{\text{dilepas}} = Q_{\text{diterima}}$$



09. Kalor laten → Kalor lebur → $Q = m \cdot Kl$
 Kalor uap → $Q = m \cdot Ku$

Kl = kalor lebur
 Ku = kalor uap



-----o0o-----

A = luas
 k = koefisien konduksi
 l = panjang bahan
 h = koefisien konveksi
 I = Intensitas
 e = emitivitas bahan
 σ = konstanta Boltzman
 T = suhu

<http://www.banksoal.sebarin.com>