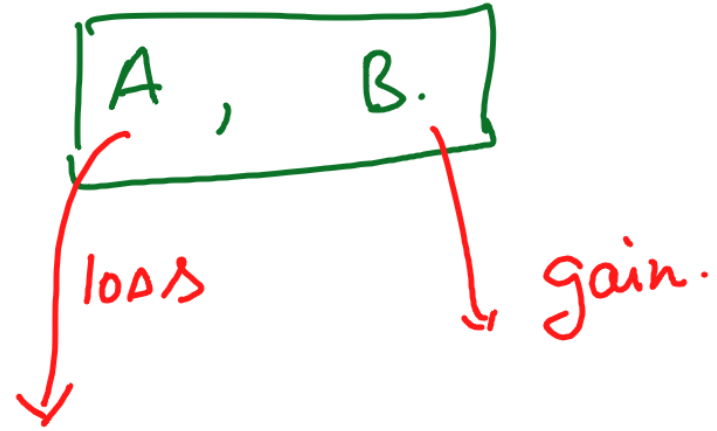


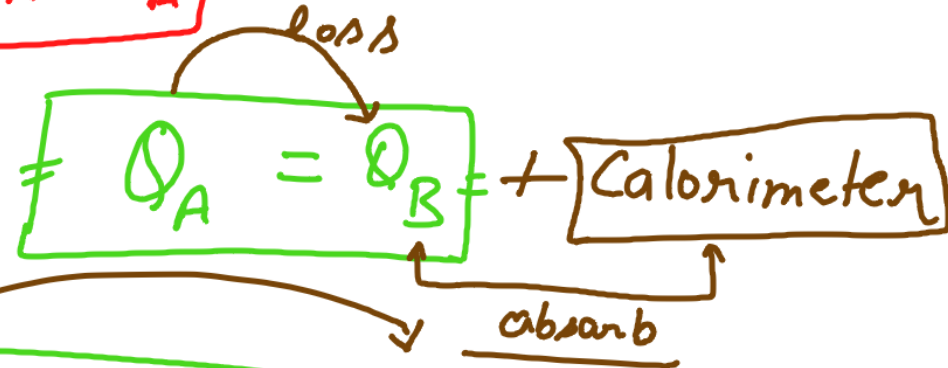
$$H L = H G$$

$$Q = m \times C \times t$$



$$Q_A = m_A \times C_A \times t_A$$

$$Q_B = m_B \times C_B \times t_B$$



$$m_A \times C_A \times t_A = m_B \times C_B \times t_B$$

$$Q = mct$$

$$Q_A = Q_B + Q_{\text{calorimeter}}$$

→ loss

gain.

$$m_A C_A \Delta t_A = m_B C_B \Delta t_B + m_{\text{cal.}} \times C_{\text{cal.}} \times \Delta t_{\text{cal.}}$$

$$mct_A = mct_B + mct_{\text{calorimeter}}$$

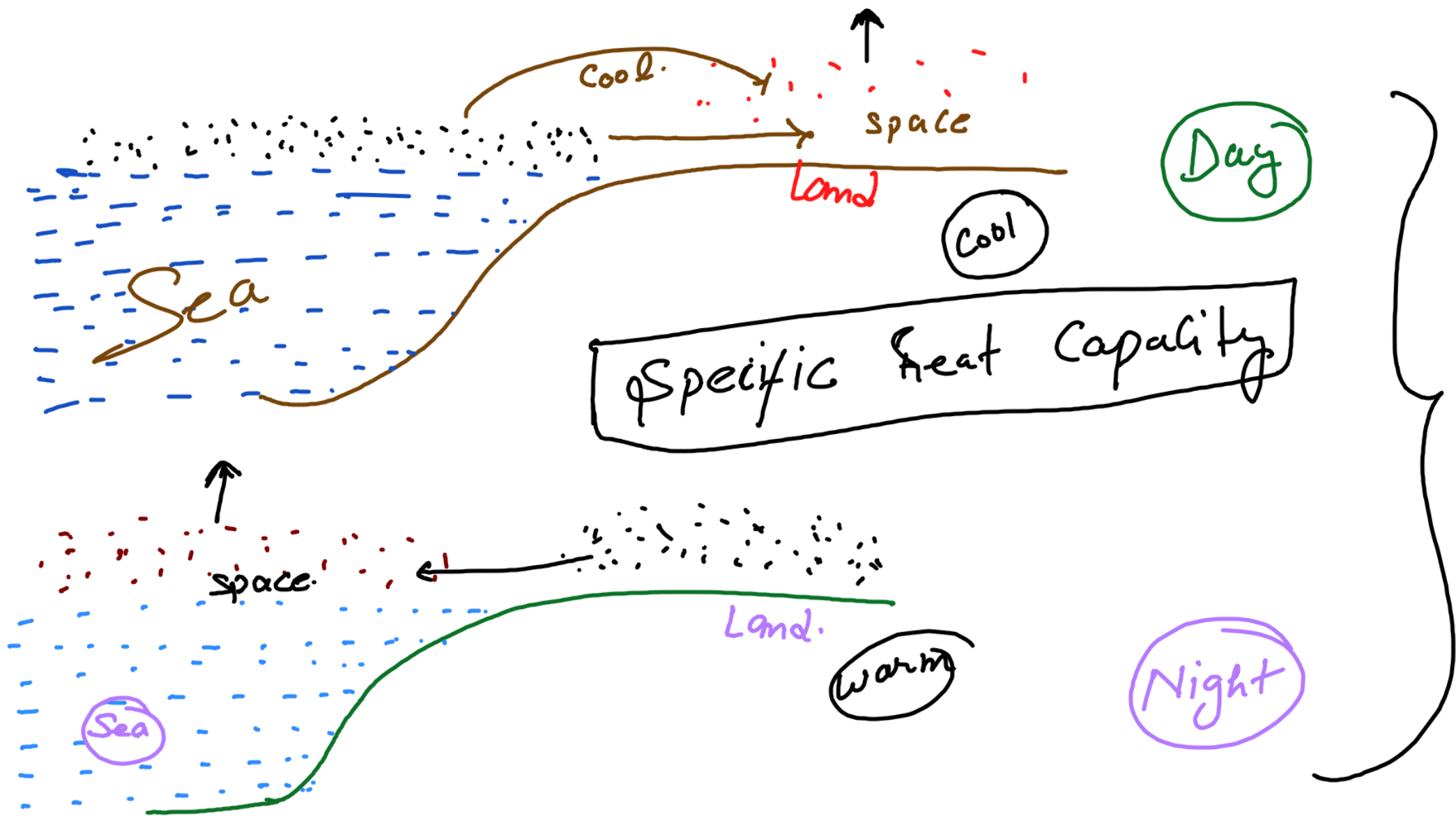
# Natural Phenomenon :-

① Climate near Sea Shore in moderate :-

↳ water = Specific heat Capacity. (high)

Sand = Specific heat Capacity. (low than water)





②

Water bottles used for fomentation

due to Specific heat Capacity  
is high.

③

Water

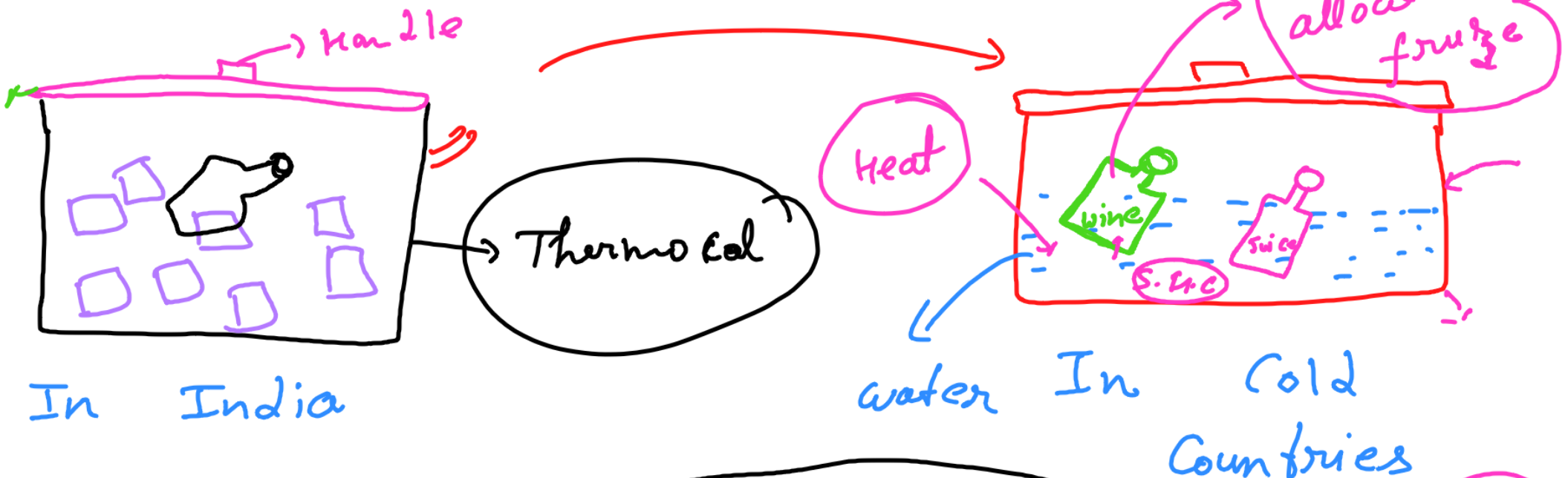
used as

Coolant

In Cars, Engines

Absorb much of  
the heat of Engine

④ water used as heat reservoir  
for wine and juice bottles.

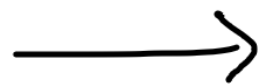
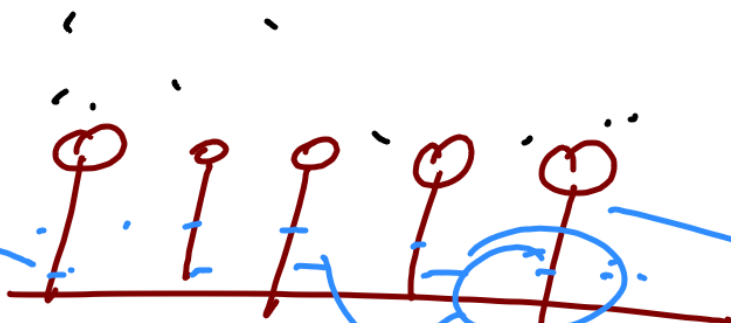


Highest Battle ground  $\Rightarrow$  Siachen glacier  $\rightarrow$   $(-50^{\circ}\text{C})$   
 $\downarrow$  Soldier

5

Farmers fill their fields with water to protect from frost.

S.H.C.



Production

Crop

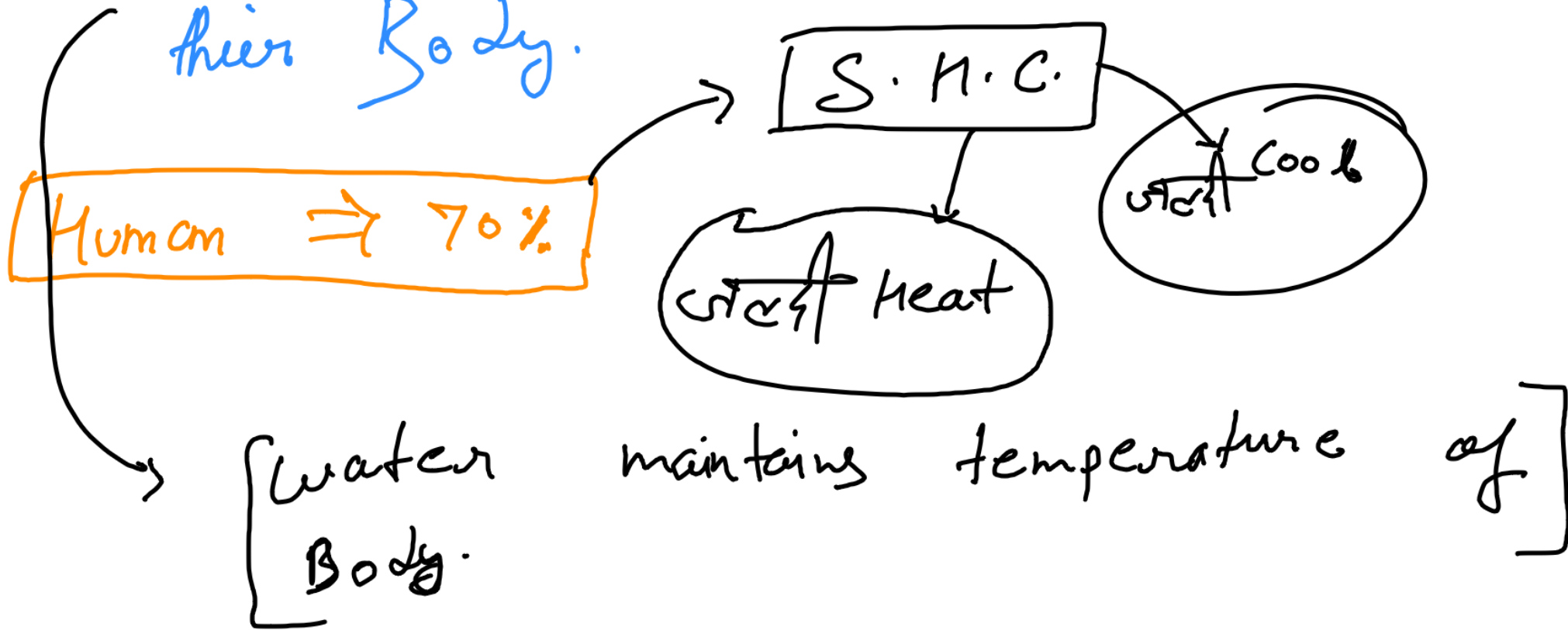
Trees


frost

This water lowers down the temp of frost.



⑥ All plants and animals have higher amount of water inside their body.

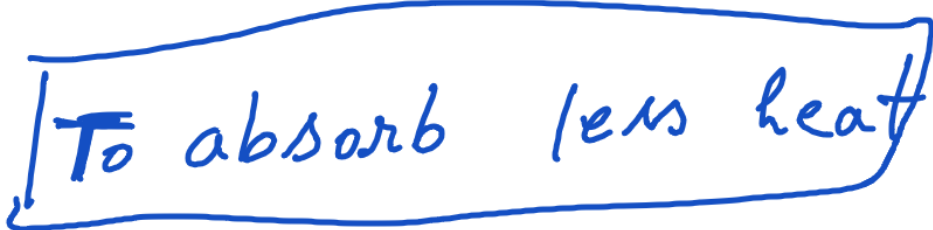


→ Cooking pan (thick).  Base

→ Food is heat up till more time.

→ Electric press → Base thick.

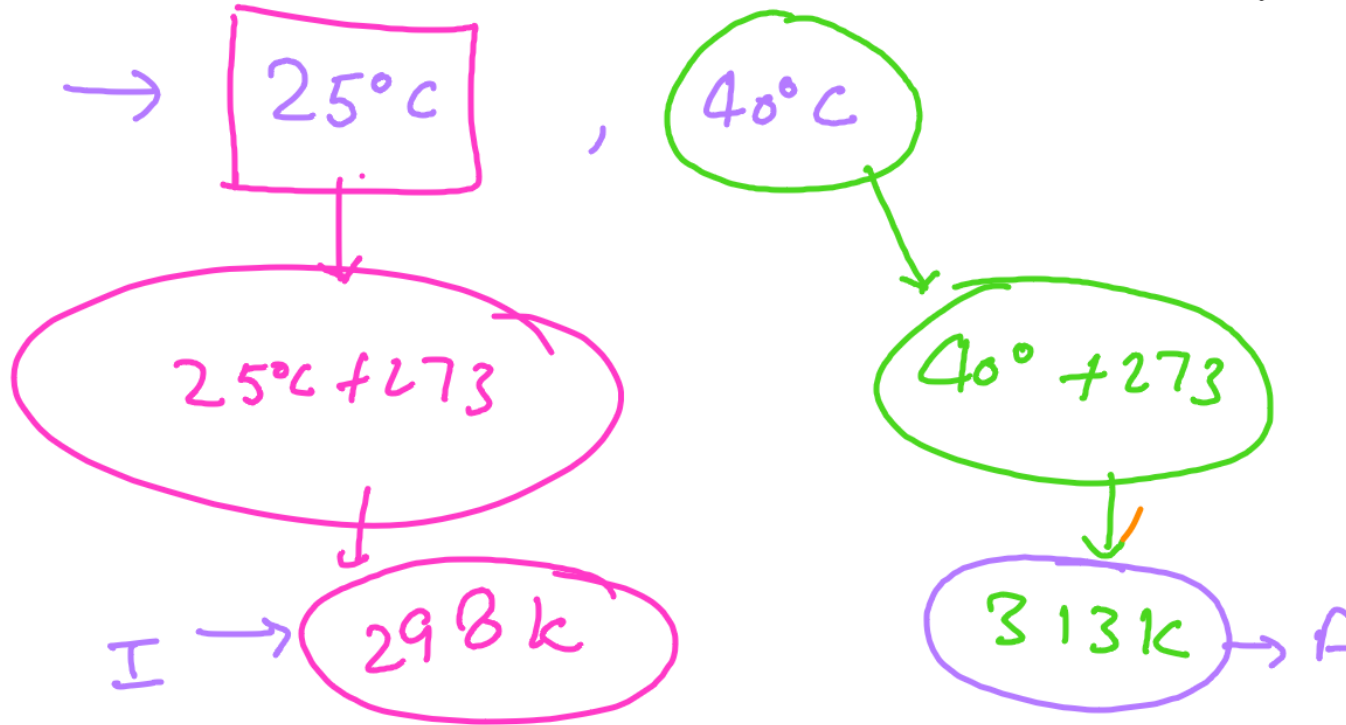
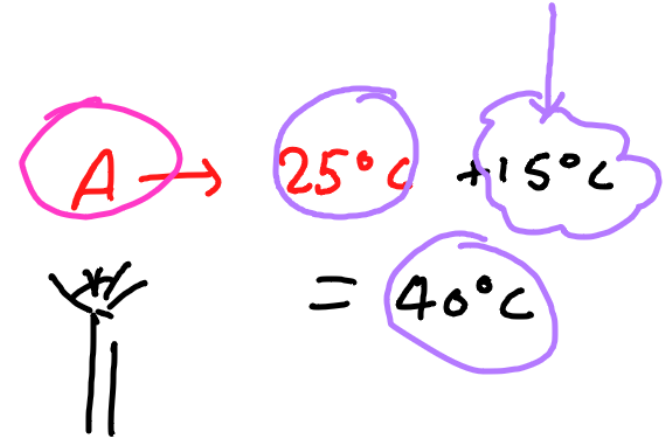
→ Calorimeter → Copper plate

 Thin

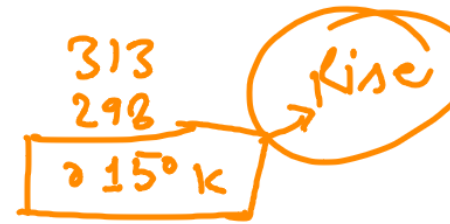
To absorb less heat

# Numericals

Rise in temp =  $15^{\circ}\text{C}$



$F - I = \text{rise}$





108K  
 A ⇒ Rise in temp. in Kelvin  
 108°C  
 B ⇒ Rise in temp. in Celsius.

Ans

37°C → <sup>Kelvin</sup> → 37 + 273 = 310K → Initial

Final — Initial

$$\begin{array}{r}
 418 \\
 - 310 \\
 \hline
 108
 \end{array}$$

108K → Rise in temp in Kelvin

37°C



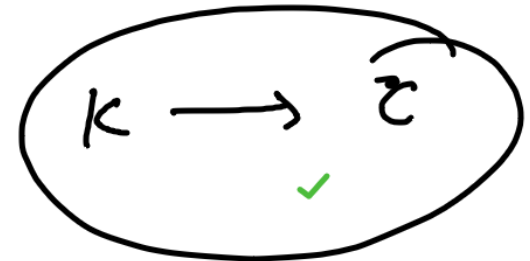
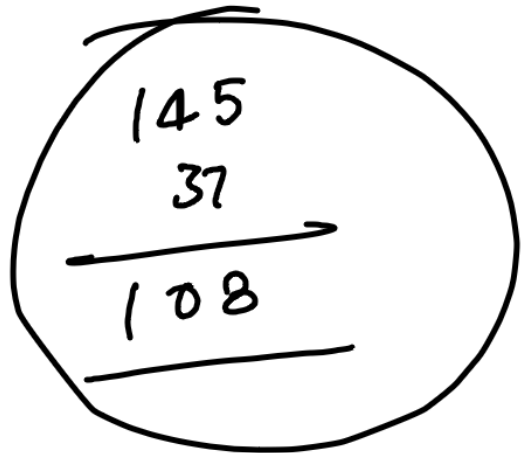
418 K



$$418 - 273 = 145^{\circ}\text{C}$$

37°C

145°C



Rise in temp °C = K

②  $Q = \frac{C}{\cancel{K}}$   $\rightarrow$   $Q = m C t$

$Q = m \times C$

A  $Q = 0.15 \cancel{kg} \times 410 \cancel{J} \cancel{kg^{-1}} \cancel{C^{-1}}$   
 $= 61.5 J K^{-1}$



B

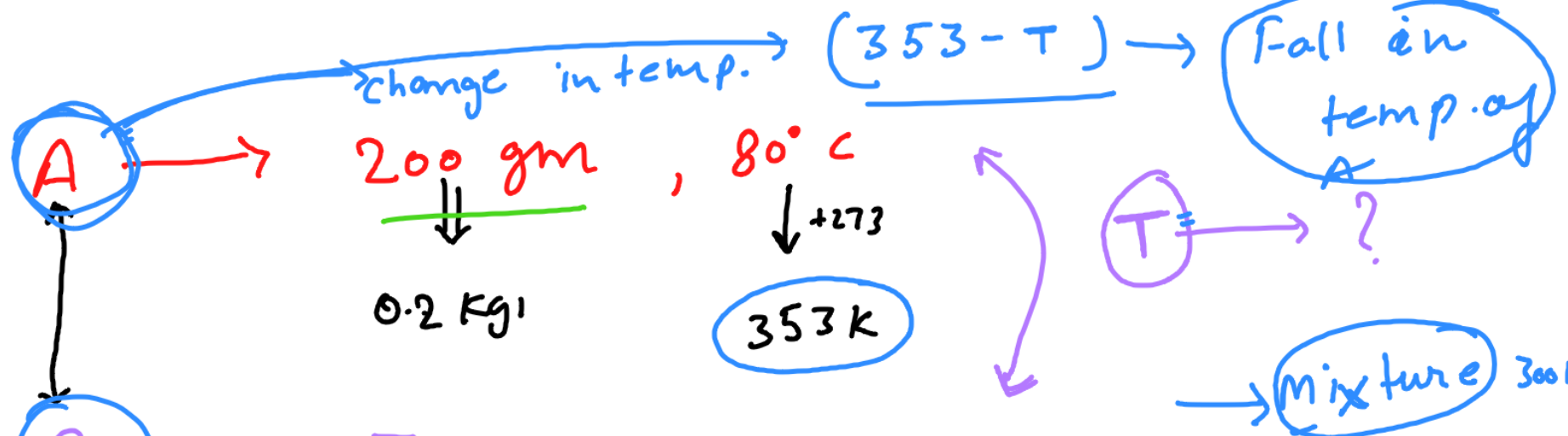
(21)

$Q_A = Q_B$

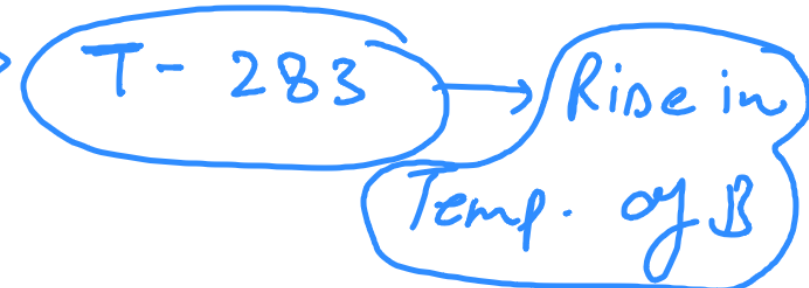
$Q = mct$

$$m_A c_A t_A = m_B c_B t_B$$

↓
↓



S.H.C. = 4200 J  $\text{Kg}^{-1} \text{K}^{-1}$



$\Rightarrow$   $0.2 \times \overset{\textcircled{A}}{4200} \times (353 - T) = 0.3 \times 4200 \times (T - 283)$

$0.2 \times (353 - T) = 0.3 \times (T - 283)$

$\frac{0.2}{0.3} \Rightarrow \frac{(T - 283)}{(353 - T)}$

$\Rightarrow 706 - 2T = 3T - 849$

$5T = 706 + 849$

$T = \frac{311 \times 5}{5}$

$T = 311 \text{ K}$

$311 - 273$

$\Rightarrow 38^\circ\text{C}$