$$\Psi = \Psi_s + \Psi_p$$

Water Potential = solute potential + pressure potential

Potential Energy of water per unit area compared to pure water

→ will it FLOW?
In what DIRECTION?

✡ you measure water potential on ~~either~~ both sides of the membrane AND compare

Pure water = 0 bars Ψ_p

Flows from HIGH to LOW

High Ψ to Low Ψ

ψ_s – solute potential
– drops as you increase the number of solutes – lower value
– more NEGATIVE

ψ_p – pressure potential
– pushing in

$$\psi_s = -iCRT$$

i = ionization constant
NO UNITS
particles compound dissociates into

C = concentration (Molarity)

R = pressure constant
0.0831 L·bars/mol·K
→ convert as necessary.

T – temp in KELVINS !!

$T = t + 273$
$K = C + 273$

ψ_p = pressure potential of an open beaker is ϕ

The molar concentration of a sugar solution in an open beaker has been determined to be 0.2 M. Calculate the solute potential at 22° C.

$\psi_{\text{pure } H_2O}$ in open container $= \phi$