4. What will happen to the cell?
   - water moves out ➔ cell membrane shrivels and the cell becomes PLASMOLYSED. Note that the cell wall stays intact.
   - OR
   - water moves in ➔ cell becomes TURGID (full, robust). Note that the cell will not explode due to the presence of a cell wall – animal cells can however blow-up!

   Answer: Turgid Cell at Equilibrium

   \[ \Psi_p = 2.5 \]
   \[ \Psi_\pi = -2.6 \]

   (Work this value out last!)

   (Water uptake into a single tiny cell is relatively small so volume doesn’t increase greatly ➔ no change in solute (osmotic) concentration.

   \[ \Psi_T = -0.1 \]

   (Same as original beaker solution ➔ cell is very small and can’t really make a big impact on the greater solution!)

**Exercises:**

1. Draw arrows to show the direction of water movement below:

   ![Diagram of a plant cell with solute and plant cell](image)

2. Define:
   - Hypo-osmotic
   - Hyperosmotic
   - Iso-osmotic

   (what do hypo-, hyper- and iso- mean?? What does –osmotic refer to? Some books use the terms hypotonic, hypertonic and isotonic – what do you think these mean??)

3. Write out the Water Potential equation in words and symbols.

4. Now try the following problem using the suggested steps overleaf:

   ![Diagram of salt water and flaccid cell](image)

   What will \( \Psi_p \) be for the cell when it reaches equilibrium with the beaker’s contents? (Show equations and working).