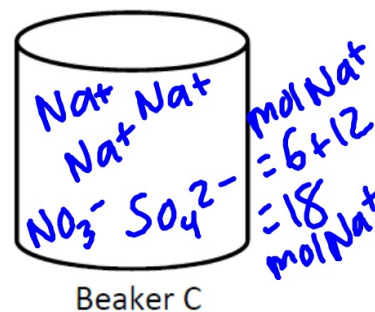
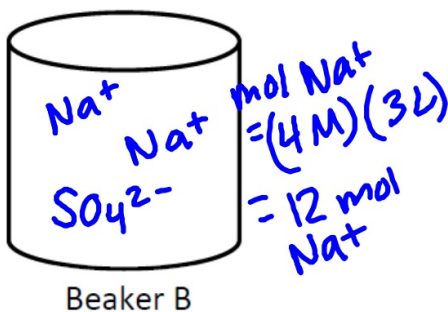
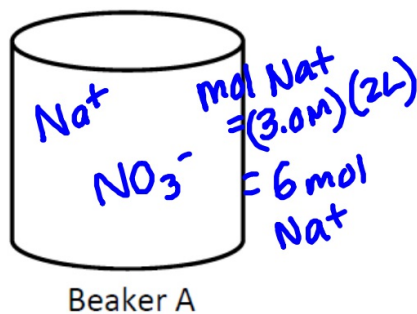


Day 5.3 Warm-Up

Beaker A contains 2.0 L of 3.0 M $\text{NaNO}_3(\text{aq})$. Beaker B contains 3.0 L of 2.0 M $\text{Na}_2\text{SO}_4(\text{aq})$.

1. Draw the particles in solution in each beaker.



2. Calculate the concentration of Na^+ ions in each beaker.

Beaker A: $[\text{Na}^+] = 1 \times 3.0 \text{ M} = 3.0 \text{ M}$ Beaker B: $[\text{Na}^+] = 2 \times 2.0 \text{ M} = 4.0 \text{ M}$

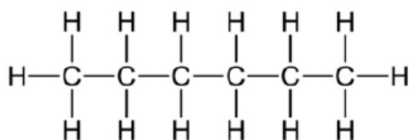
3. The contents of Beakers A and B are poured into an empty Beaker C. Calculate the concentration of Na^+ ions in Beaker C.

$$[\text{Na}^+] = \frac{\text{mol Na}^+}{\text{L soln}} = \frac{18 \text{ mol Na}^+}{5.0 \text{ L}} = 3.6 \text{ M Na}^+$$

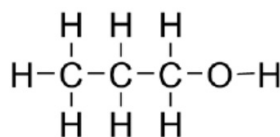
4. A 0.10 M aqueous solution of sodium sulfate, Na_2SO_4 , is a better conductor of electricity than 0.10 M aqueous solution of sodium chloride, NaCl . Which of the following best explains this observation?

- Na_2SO_4 is more soluble in water than NaCl .
- Na_2SO_4 has a higher molar mass than NaCl .
- To prepare a given volume of 0.10 M solution, the mass of Na_2SO_4 needed is more than twice the mass of NaCl needed.
- More moles of ions are present in a given volume of 0.10 M Na_2SO_4 than in the same volume of 0.10 M NaCl .
- The degree of dissociation of Na_2SO_4 in solution is significantly greater than that NaCl .

5. The Lewis structure of a molecule of hexane, C_6H_{14} , and propanol, $\text{C}_3\text{H}_7\text{OH}$ are below. Is hexane soluble in propanol? Explain your reasoning.



Hexane



Propanol

No, hexane is nonpolar and propanol is polar.
 \therefore they do not attract one another.