Explain the steps you would follow to make 500 mL of a 0.5 mol/L solution of sodium chloride (NaCl) in the lab.

Calculations:

$$\nu = c_M * V$$

$$\nu(NaCl) = 0.5 * 0.5 = 0.25 mol$$

$$m = \nu * M$$

$$m(NaCl) = 0.25 * (23 + 35.5) = 14.625 g$$

Making:

1. Weight 14.625g of NaCl and put it into the glass.
2. Dilute it with 400 mL of water.
3. Decant solution in the graduated cylinder or other glassware and put rests of water.
4. Final volume should be 500mL.