Name_____

Data Table

Molarity of EDTA   _____ M

Volume of tap water   _____ mL

	Trial 1	Trial 2	Trial 3
Final Volume, mL			
Initial Volume, mL			
Volume of EDTA Added, mL			

Calculations

1. Find the average volume of EDTA needed for the titration using the data from Trials 2 and 3 only.

2. Use the molarity of the EDTA solution and the average volume of EDTA added to calculate the average number of moles of EDTA required for the titration.

3. EDTA reacts with the hard water ions in a 1:1 mole ratio. Calculate the total number of moles of the metal ions present in the 50 mL of water tested.

4. The hardness of water is often reported as ppm Ca. This means that all of the hardness is assumed to be caused by calcium ions, and its concentration is reported in parts per million.

$$\text{ppm Ca} = \frac{\text{grams Ca}}{\text{grams solution}} \times 1,000,000$$

To find parts per million of calcium, convert the moles of metal ions present to grams of calcium. The density of water is 1.00 g/mL. Divide grams of calcium by grams of tap water, and multiply by 1,000,000.