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| **Dilutions****The Mole** | Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**In a dilution**:

* water is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* volume \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* concentration \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



In the initial and diluted solution:

1. the moles of solute are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. the concentrations and volumes are related by the following equation:

 *M*1*V*1 = *M*2*V*2

 ***initial diluted***



What volume of a 2.00 M HCl solution can be prepared by diluting 25.0 mL of 14.0 M (m/v) HCl solution?

**Prepare a table**:

Solve dilution equation for unknown and enter values:

What is the molarity of a solution prepared by diluting 10.0 mL of 9.00M NaOH to 60.0 mL?

What is the final volume (mL) of 15.0 mL of a 1.80 M KOH diluted to give a 0.300 M solution?