

## Dilutions Worksheet

Name: \_\_\_\_\_

U7LM3B-WS

1. When a solution of glucose,  $C_6H_{12}O_6$ , is diluted, the number of moles of the solute in the original solution is (greater than, less than, **the same as**) the number of moles of solute in the resulting less concentrated solution.
2. Calculate the *molarity* of the resulting solution if a certain volume of water was added to 50.0 mL of 2.10 M KOH solution to make a solution with a volume of 1.40 L.
3. Commercial concentrated hydrochloric acid is 12.0 M HCl. What *volume* of concentrated HCl is required to prepare 2.50 L of 2.20 M HCl solution?
4. A 250. mL of a sodium hydroxide solution is diluted to 825 mL with water to form a 0.80 M solution. What was the molarity of the original solution?
5. A lab technician needs one liter of 0.250 M HCl. However, in her lab, there is only 2.0 M HCl solution available. Describe what the lab technician will do.
6. Calculate the *molarity* of a solution prepared by mixing 50.0 mL of 0.250 M  $Na_2SO_4$  and 100. mL of 0.125 M  $Na_2SO_4$  solution.