Chemistry: Unit VII. Dilution Assignment

1. A stock solution of 1.00 M NaCl is available. How many milliliters are needed to make 100.0 mL of 0.750 M

2. What volume of 0.250 M KCl is needed to make 100.0 mL of 0.100 M solution?

3. Concentrated H_2SO_4 is 18.0 M. What volume is needed to make 2.00 L of 1.00 M solution?

4. Concentrated HCl is 12.0 M. What volume is needed to make 2.00 L of 1.00 M solution?

5. A 0.500 M solution is to be diluted to 500.0 mL of a 0.150 M solution. How many mL of the 0.500 M solution are required?

6. A stock solution of 10.0 M NaOH is prepared. From this solution, you need to make 250.0 mL of 0.375 M solution. How many mL will be
required?

7. 2.00 L of 0.800 M $NaNO_3$ must be prepared from a solution known to be 1.50 M in concentration. How many mL are required?

8. Calculate the final concentration if 2.00 L of 3.00 M NaCl and 4.00 L of 1.50 M NaCl are mixed. Assume there is no volume contraction upon mixing.

9. Calculate the final concentration if 2.00 L of 3.00 M NaCl, 4.00 L of 1.50 M NaCl and 4.00 L of water are mixed. Assume there is no volume contraction upon mixing.

Answers.
1. 75 mL 2. 40 mL 3. 0.111 L 4. 0.167 L 5. 150 mL 6. 9.375 mL 7. 1.07 L 8. 2.00 M 9. 1.20 M