Dilutions Worksheet

1) If I have 340 mL of a 0.5 M NaBr solution, what will the concentration be if I add 560 mL more water to it?

2) If I dilute 250 mL of 0.10 M lithium acetate solution to a volume of 750 mL, what will the concentration of this solution be?

3) If I leave 750 mL of 0.50 M sodium chloride solution uncovered on a windowsill and 150 mL of the solvent evaporates, what will the new concentration of the sodium chloride solution be?

4) To what volume would I need to add water to the evaporated solution in problem 3 to get a solution with a concentration of 0.25 M?

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Dilutions Worksheet – Solutions

1) If I have 340 mL of a 0.5 M NaBr solution, what will the concentration be if I add 560 mL more water to it?
0.19 M (the final volume is 900 mL, set up the equation from that)

2) If I dilute 250 mL of 0.10 M lithium acetate solution to a volume of 750 mL, what will the concentration of this solution be?
0.033 M (the final volume is 750 mL, set up the equation from that. Note that the phrasing difference between problems 1 and 2 makes a big difference in the final answer).

3) If I leave 750 mL of 0.50 M sodium chloride solution uncovered on a windowsill and 150 mL of the solvent evaporates, what will the new concentration of the sodium chloride solution be?
0.63 M (this is the opposite of a dilutions problem – the V_2 value is smaller than V_1, but otherwise the equation is no different.)

4) To what volume would I need to add water to the evaporated solution in problem 3 to get a solution with a concentration of 0.25 M?
1500 mL

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