

Name: _____

Date: ____/____/____

Period: _____

Calculations Involving Solutions Practice

1. Sea water contains roughly 28.0 g of NaCl per liter. What is the molarity of sodium chloride in sea water?
2. What is the molarity of 5.30 g of Na_2CO_3 dissolved in 400.0 mL solution?
3. How many moles of Na_2CO_3 are there in 10.0 L of 2.0 M solution?
4. How many moles of NaCl are contained in 100.0 mL of a 0.20 M solution?
5. What weight (in grams) of H_2SO_4 would be needed to make 750.0 mL of 2.00 M solution?
6. What volume (in mL) of 18.0 M H_2SO_4 is needed to contain 2.45 g H_2SO_4 ?
7. How many grams of $\text{Ca}(\text{OH})_2$ are needed to make 100.0 mL of 0.250 M solution?
8. What is the molarity of a solution made by dissolving 20.0 g of H_3PO_4 in 50.0 mL of solution?
9. What weight (in grams) of KCl is there in 2.50 liters of 0.50 M KCl solution?
10. Determine the molarity of a solution containing 4.67 moles of Li_2SO_3 dissolved to make 2.04 liters of solution.
11. What will the concentration be if 560 mL of water is added to 340 mL of a 0.5 M NaBr solution?

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12. What will the concentration be if 250 mL of 0.10 M lithium acetate solution is diluted to a volume of 750 mL?

13. If 750 mL of 0.50 M sodium chloride solution is left uncovered on a windowsill and 150 mL of the solvent evaporates, what will the new concentration of the sodium chloride solution be?

14. What volume of water must be added to the evaporated solution above to get a solution with a concentration of 0.25 M?

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

16. Concentrated H₂SO₄ is 18.0 M. What volume is needed to make 2.00 L of 1.00 M solution?

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

18. 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?

19. 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?

20. 2.00 L of 0.800 M NaNO₃ must be prepared from a solution known to be 1.50 M in concentration. How many mL are required?