% Concentration / ppm / Dilutions – Checkpoint quiz NAME \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. How many grams of NaOH are in 210 mL of a 4.5% (mass/volume) solution of Drain-O?
2. What is the percent concentration (mass/mass) of 10 grams of sugar dissolved in 900 grams of water? [Remember: add your sugar & water mass together!]
3. You dilute 20 mL of bleach in 3 liters of water, to sanitize your toilet. What is the % (volume/volume) of bleach in your cleaning solution?
4. You want to make 100 mL of a 20% salt (NaCl) in water solution. Which of these formulas would be most appropriate to use?
	1. % mass/mass (%m/m)
	2. % volume/volume (%v/v)

a. 0.0066%

b. 0.01%

c. 0.67%

d. 1.10%

e. 1.11%

ab. 6.6%

ac. 0.21

ad. 0.32

ae. 0.44

bc. 0.57

bd. 1.75

be. 2

cd. 6.55

ce. 9.45

de. 20

1. 46.6
2. 48
3. 50
4. 112
5. 200

ab. 945

ac. 2000

ad. 2000

* 1. % mass/volume (%m/v)
	2. % molarity (%moles/v)
1. How many grams of salt are needed to make the solution in #4 above?
2. The average American has 8 ppm of pesticide in their fat tissue. If you have 14 kg of fatty tissue in your body, **how many** **mg** of pesticide do you contain?
3. Kennecott Copper discharges 4 liters of 40,000 ppm toxic waste into an overflow tank containing 500,000 liters of water. What is the final concentration of toxic waste?
4. How many **milliliters** of a concentrated 3 M H2SO4 acid need to be diluted to make 1.5 liters of a 4 M H2SO4 solution?



Dilution problems:

1. Multiply the pair
2. Divide by the loner