Solutions Pre Quiz

1. Convert the following units to ppm.

44 g/L	2 %	150 mg/L
$\frac{44\,g}{1000\,mL} = \frac{x}{1000000\,mL}$ 44 000 ppm	$\frac{2g}{100\,mL} = \frac{x}{1000000\,mL}$ 20 000 ppm	150 ppm

2. Put the following concentrations in order from weakest to strongest.

A- 5%	B- 450 g/L	C- 0.003 ppm	D- 15 mg/L
$\frac{5}{100} = \frac{x}{1000000}$ 50 000 ppm	$\frac{450}{1000} = \frac{x}{1000000}$ 450 000 ppm	.003 ppm	15 ppm

Order C → D → A → B

3. You test the quality of drinking water in your house by taking 330 mL sample and you find it contains 900 mg of contaminant. What is the concentration of the contaminant in %?

$\frac{.9}{330\,mL} = \frac{x}{100\,mL}$ = 0.27%

4. Different rivers are being tested for contaminants that are found in the water. The contaminant's lethal dose is 5.5 %. Below is a table that has the contaminant level in 2 different rivers.

5.5 lethal

	Contaminant
River 1	0.0007 ppm
River 2	0.45 g/L

Which of the following statements is true?

A) Only river 1 is contaminated
B) Only river 2 is contaminated
C) Neither rivers are contaminated
D) Both rivers are contaminated

River 1

$\frac{.0007}{1000000} = \frac{x}{100}$ = 0.0000007%

River 2

$\frac{.45g}{1000} = \frac{x}{100}$ = .045%

5. You dissolve 75 mg in 55 L of water. What is the concentration in ppm?

A) 1.4 ppm B) 1 364 ppm C) 13 640 ppm D) 1 363636 ppm

$\frac{.075}{55000} = \frac{x}{1000000} = 1.4ppm$

6. You realize that your goldfish have been dying very quickly. You decide to see if 2 different fish aquariums you have at home have too much of certain contaminants. You do some research and find the following:

   Chlorine's lethal does is 0.2 ppm

   Iron's lethal does is 1.0 ppm.

   You test your aquariums for these contaminants and find the following results:

Contaminant results

	Chlorine	Iron
Aquarium 1	0.000015 %	0.003 %
Aquarium 2	0.002 g/L	0.4 mg/L

Determine if either aquarium has too much contaminant.

Aquarium 1 chlorine work	Aquarium 1 iron work
$\frac{0.000015}{100} = \frac{x}{1000000}$ Answer 0.15 ppm	$\frac{.003}{100} = \frac{x}{1000000}$ Answer 30ppm
Circle: Lethal or not lethal	Circle: Lethal or not lethal
Aquarium 2chlorine work	Aquarium 2 iron work
$\frac{.0029}{1000} = \frac{x}{1000000}$ Answer 2 ppm	.4 ppm Answer .4ppm
Circle: Lethal or not lethal	Circle: Lethal or not lethal