Review for Solutions test

1. ☐

At standard pressure, how do the boiling point and the freezing point of NaCl(aq) compare to the boiling point and the freezing point of H2O(ℓ)?

1. Both the boiling point and the freezing point of NaCl(aq) are lower.
2. Both the boiling point and the freezing point of NaCl(aq) are higher.
3. The boiling point of NaCl(aq) is lower, and the freezing point of NaCl(aq) is higher.
4. The boiling point of NaCl(aq) is higher, and the freezing point of NaCl(aq) is lower.

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2. ☐

The table below gives information about four aqueous solutions at standard pressure.

Four Aqueous Solutions

Aqueous Solution	Concentration (M)	Solute
A	2.0	$BaCl_2$
B	2.0	$NaNO_3$
C	1.0	$C_6H_{12}O_6$
D	1.0	K_2SO_3

particles

3 x 2 = 6
2 x 2 = 4
1 x 1 = 1
3 x 1 = 3

Which list of solutions is arranged in order from highest boiling point to lowest boiling point?

1. *A, B, D, C*
2. *A, C, B, D*
3. *C, D, B, A*
4. *D, B, C, A*

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3. ☐

Which unit can be used to express the concentration of a solution?

1. L/s
3. ppm
2. J/g
4. kPa

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4. ☐

According to Table *F*, which compound is soluble in water?

1. barium phosphate
3. silver iodide
2. calcium sulfate
4. sodium perchlorate

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5. ☐

What is the concentration of a solution, in parts per million, if 0.02 gram of Na_3PO_4 is dissolved in 1000 grams of water?

1. 20 ppm
3. 0.2 ppm
2. 2 ppm
4. 0.02 ppm

$\frac{.02}{1000} \times 1000000$

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6. ☐

Base your answer to the question on the information below.

Two alcohols that are used in our everyday lives are rubbing alcohol and ethylene glycol. Rubbing alcohol is used as an antiseptic. Ethylene glycol is the main ingredient in antifreeze, which is used in automobile cooling systems.

Figure 1

Which of the following is a correct numerical setup for calculating the total number of moles of ethylene glycol needed to prepare 2.50 liters of a 10.0 M solution?

1. $10.0\ M = \frac{x\ mol}{2.50\ L}$ $\quad 10 = \frac{x}{2.5}$
2. $x\ mol = \frac{10.0M}{2.50\ L}$
3. $10.0\ L = \frac{x\ mol}{2.50M}$
