#### **Molarity Calculations**

#### Activity 1: Case Studies Question Group 1 Question 1

Tap on the fields to accurately complete the statement regarding Solutions A and B.

The solute concentration in Solution \_\_\_\_\_\_ is **greater than** the solute concentration in Solution \_\_\_\_\_\_ by a factor of \_\_\_\_\_\_.



1.00 mol NaCl 0.50 L H<sub>2</sub>O

#### Question 2

Tap on the fields to accurately complete the statement regarding Solutions A and B.

The solute concentration in Solution \_\_\_\_\_\_ is **greater than** the solute concentration in Solution \_\_\_\_\_\_ by a factor of \_\_\_\_\_\_.





#### **Question 3**

Tap on the fields to accurately complete the statement regarding Solutions A and B.

The solute concentration in Solution
is greater than the solute
concentration in Solution
by a factor of





#### Question Group 2 Question 4

Tap on the fields to accurately complete the statement regarding Solutions A and B.

The solute concentration in Solution \_\_\_\_\_\_ is **greater than** the solute concentration in Solution \_\_\_\_\_ by a factor of \_\_\_\_\_.





# Question 5

Tap on the fields to accurately complete the statement regarding Solutions A and B.

The solute concentration in Solution	
is greater than the solute	
concentration in Solution by	y
a factor of	





# **Question 6**

Tap on the fields to accurately complete the statement regarding Solutions A and B.

The solute concentration in Solution \_\_\_\_\_\_ is **greater than** the solute concentration in Solution \_\_\_\_\_\_ by a factor of \_\_\_\_\_\_.





#### Question Group 3 Question 7

Tap on the fields to accurately complete the statement regarding Solutions A and B.

The solute concentration in Solution \_\_\_\_\_\_ is **greater than** the solute concentration in Solution \_\_\_\_\_ by a factor of \_\_\_\_\_.





# **Question 8**

Tap on the fields to accurately complete the statement regarding Solutions A and B.

The solute concentration in Solution	
is greater than the solute	
concentration in Solution by	/
a factor of	





# **Question 9**

Tap on the fields to accurately complete the statement regarding Solutions A and B.

The solute concentration in Solution \_\_\_\_\_\_ is **greater than** the solute concentration in Solution \_\_\_\_\_\_ by a factor of \_\_\_\_\_\_.



2.000 mol NaCl 0.500 L H<sub>2</sub>O

#### Question Group 4 Question 10

Tap on the fields to accurately complete the statement regarding Solutions A and B.

The solute concentration in Solution \_\_\_\_\_\_ is **greater than** the solute concentration in Solution \_\_\_\_\_ by a factor of \_\_\_\_\_.





# Question 11

Tap on the fields to accurately complete the statement regarding Solutions A and B.

The solute concentration in Solution	
is greater than the solute	
concentration in Solution b	y
a factor of	





# **Question 12**

Tap on the fields to accurately complete the statement regarding Solutions A and B.

The solute concentration in Solution \_\_\_\_\_\_ is **greater than** the solute concentration in Solution \_\_\_\_\_\_ by a factor of \_\_\_\_\_\_.





#### Question Group 5 Question 13

Tap on the fields to accurately complete the statement regarding Solutions A and B.

The solute concentration in Solution \_\_\_\_\_\_ is **greater than** the solute concentration in Solution \_\_\_\_\_ by a factor of \_\_\_\_\_.





# Question 14

Tap on the fields to accurately complete the statement regarding Solutions A and B.

The solute concentration in Solution \_\_\_\_\_\_ is **greater than** the solute concentration in Solution \_\_\_\_\_ by a factor of \_\_\_\_\_.





# **Question 15**

Tap on the fields to accurately complete the statement regarding Solutions A and B.

The solute concentration in Solution \_\_\_\_\_\_ is **greater than** the solute concentration in Solution \_\_\_\_\_\_ by a factor of \_\_\_\_\_\_.





#### Question Group 6 Question 16

Tap on the fields to accurately complete the statement regarding Solutions A and B.

The solute concentration in Solution \_\_\_\_\_\_ is **greater than** the solute concentration in Solution \_\_\_\_\_\_ by a factor of \_\_\_\_\_\_.





#### **Question 17**

Tap on the fields to accurately complete the statement regarding Solutions A and B.

The solute concentration in Solution \_\_\_\_\_\_ is **greater than** the solute concentration in Solution \_\_\_\_\_\_ by a factor of \_\_\_\_\_\_.





# **Question 18**

Tap on the fields to accurately complete the statement regarding Solutions A and B.

The solute concentration in Solution \_\_\_\_\_\_ is **greater than** the solute concentration in Solution \_\_\_\_\_\_ by a factor of \_\_\_\_\_\_.





#### Activity 2: Solution ID Question Group 7 Question 19

Three aqueous solutions are made by following the directions shown on the *Notes*. Which solutions would have a solute concentration of 2.00 M? Select all that apply.

<b>Dissolve:</b>	<b>Dissolve:</b>	<b>Dissolve:</b>
2.00 mol NaOH	4.00 mol NaOH	1.00 mol NaOH
in	in	in
1.00 L H <sub>2</sub> 0	0.50 L H20	0.50 L H20

#### **Question 20**

Three aqueous solutions are made by following the directions shown on the *Notes*. Which solutions would have a solute concentration of 2.00 M? Select all that apply.



# **Question 21**

Three aqueous solutions are made by following the directions shown on the *Notes*. Which solutions would have a solute concentration of 2.00 M? Select all that apply.

<b>Dissolve:</b>	<b>Dissolve:</b>
1.00 mol NaOH	2.00 mol NaOH
in	in
0.50 L H20	1.00 L H <sub>2</sub> 0
	Dissolve: 1.00 mol NaOH in 0.50 L H <sub>2</sub> 0

# Question Group 8 Question 22

Three aqueous solutions are made by following the directions shown on the *Notes*. Which solutions would have a solute concentration of 4.0 M? Select all that apply.



# **Question 23**

Three aqueous solutions are made by following the directions shown on the *Notes*. Which solutions would have a solute concentration of 4.0 M? Select all that apply.



# **Question 24**

Three aqueous solutions are made by following the directions shown on the *Notes*. Which solutions would have a solute concentration of 4.0 M? Select all that apply.

<b>Dissolve:</b>	Dissolve:	<b>Dissolve:</b>
4.00 mol NaOH	2.00 mol NaOH	1.00 mol NaOH
in	in	in
4.00 L H20	0.50 L H20	4.00 L H <sub>2</sub> 0

# Question Group 9 Question 25

Three aqueous solutions are made by following the directions shown on the *Notes*. Which solutions would have a solute concentration of 2.0 M? Select all that apply.

<b>Dissolve:</b>	<b>Dissolve:</b>	<b>Dissolve:</b>
2.00 g NaOH	1.00 g NaOH	20.00 g NaOH
in	in	in
1.00 L H <sub>2</sub> 0	2.00 L H <sub>2</sub> 0	0.25 L H20

# **Question 26**

Three aqueous solutions are made by following the directions shown on the *Notes*. Which solutions would have a solute concentration of 2.0 M? Select all that apply.



# Question 27

Three aqueous solutions are made by following the directions shown on the *Notes*. Which solutions would have a solute concentration of 2.0 M? Select all that apply.

<b>Dissolve:</b>	<b>Dissolve:</b>	<b>Dissolve:</b>
40.00 g NaOH	1.00 g NaOH	2.00 g NaOH
in	in	in
0.50 L H20	2.00 L H <sub>2</sub> 0	1.00 L H <sub>2</sub> 0

### Question Group 10 Question 28

Three aqueous solutions are made by following the directions shown on the *Notes*. Which solutions would have a solute concentration of 0.50 M? Select all that apply.



#### **Question 29**

Three aqueous solutions are made by following the directions shown on the *Notes*. Which solutions would have a solute concentration of 0.50 M? Select all that apply.



# Question 30

Three aqueous solutions are made by following the directions shown on the *Notes*. Which solutions would have a solute concentration of 0.50 M? Select all that apply.

<b>Dissolve:</b>	<b>Dissolve:</b>	<b>Dissolve:</b>
21.00 g NaF	21.00 g NaF	42.00 g NaF
in	in	in
0.50 L H20	1.00 L H <sub>2</sub> 0	2.00 L H <sub>2</sub> 0

# Question Group 11 Question 31

Three aqueous solutions are made by following the directions shown on the *Notes*. Which solutions would have a solute concentration of 0.25 M? Select all that apply.



#### **Question 32**

Three aqueous solutions are made by following the directions shown on the *Notes*. Which solutions would have a solute concentration of 0.25 M? Select all that apply.



# **Question 33**

Three aqueous solutions are made by following the directions shown on the *Notes*. Which solutions would have a solute concentration of 0.25 M? Select all that apply.

<b>Dissolve:</b>	<b>Dissolve:</b>	<b>Dissolve:</b>
20.00 g HF	4.00 mol NaF	1.00 g NaOH
in	in	in
4.00 L H20	1.00 L H <sub>2</sub> 0	4.00 L H <sub>2</sub> 0

# Question Group 12 Question 34

Three aqueous solutions are made by following the directions shown on the *Notes*. Which solutions would have a solute concentration of 2.00 M? Select all that apply.



#### **Question 35**

Three aqueous solutions are made by following the directions shown on the *Notes*. Which solutions would have a solute concentration of 2.00 M? Select all that apply.



# **Question 36**

Three aqueous solutions are made by following the directions shown on the *Notes*. Which solutions would have a solute concentration of 2.00 M? Select all that apply.

<b>Dissolve:</b>	<b>Dissolve:</b>	<b>Dissolve:</b>
10.00 g HF	40.00 g NaOH	42.00 g NaF
in	in	in
2.00 L H20	2.00 L H <sub>2</sub> 0	0.50 L H <sub>2</sub> 0

#### Activity 3: Solve It Question Group 13 Question 37

A solution is made by dissolving 43.7 grams of  $AI(OH)_3$  in 100.0 mL of solution. Fill in the blanks and determine the molar concentration of  $AI(OH)_3$ .

#### **Question 38**

A solution is made by dissolving 21.7 grams of NaF in 100.0 mL of solution. Fill in the blanks and determine the molar concentration of NaF.

#### **Question 39**

A solution is made by dissolving 32.7 grams of NaOH in 100.0 mL of solution. Fill in the blanks and determine the molar concentration of NaOH.

#### **Question 40**

A solution is made by dissolving 51.8 grams of NaNO<sub>3</sub> in 100.0 mL of solution. Fill in the blanks and determine the molar concentration of NaNO<sub>3</sub>.

#### Question 41

A solution is made by dissolving 35.2 grams of HNO<sub>3</sub> in 100.0 mL of solution. Fill in the blanks and determine the molar concentration of HNO<sub>3</sub>.

#### Question Group 14 Question 41

A solution is made by dissolving 52.7 grams of  $AI(OH)_3$  in 250.0 mL of solution. Fill in the blanks and determine the molar concentration of  $AI(OH)_3$ .

#### **Question 42**

A solution is made by dissolving 36.1 grams of NaF in 250.0 mL of solution. Fill in the blanks and determine the molar concentration of NaF.

#### **Question 43**

A solution is made by dissolving 34.7 grams of NaOH in 250.0 mL of solution. Fill in the blanks and determine the molar concentration of NaOH.

#### **Question 44**

A solution is made by dissolving 62.6 grams of  $NaNO_3$  in 250.0 mL of solution. Fill in the blanks and determine the molar concentration of  $NaNO_3$ .

#### **Question 45**

A solution is made by dissolving 71.5 grams of  $HNO_3$  in 250.0 mL of solution. Fill in the blanks and determine the molar concentration of  $HNO_3$ .

#### Question Group 15 Question 46

A solution is made by dissolving 56.5 grams of  $AI(OH)_3$  in 400.0 mL of solution. Fill in the blanks and determine the molar concentration of  $AI(OH)_3$ .

#### **Question 47**

A solution is made by dissolving 38.5 grams of NaF in 400.0 mL of solution. Fill in the blanks and determine the molar concentration of NaF.

#### **Question 48**

A solution is made by dissolving 42.1 grams of NaOH in 400.0 mL of solution. Fill in the blanks and determine the molar concentration of NaOH.

#### **Question 49**

A solution is made by dissolving 71.9 grams of NaNO<sub>3</sub> in 400.0 mL of solution. Fill in the blanks and determine the molar concentration of NaNO<sub>3</sub>.

#### **Question 50**

A solution is made by dissolving 82.6 grams of HNO<sub>3</sub> in 400.0 mL of solution. Fill in the blanks and determine the molar concentration of HNO<sub>3</sub>.

# Question Group 16

### Question 51

A solution is made by dissolving 62.7 grams of  $AI(OH)_3$  in 500.0 mL of solution. Fill in the blanks and determine the molar concentration of  $AI(OH)_3$ .

#### Question 52

A solution is made by dissolving 44.9 grams of NaF in 500.0 mL of solution. Fill in the blanks and determine the molar concentration of NaF.

#### Question 53

A solution is made by dissolving 56.1 grams of NaOH in 500.0 mL of solution. Fill in the blanks and determine the molar concentration of NaOH.

#### **Question 54**

A solution is made by dissolving 78.3 grams of NaNO<sub>3</sub> in 500.0 mL of solution. Fill in the blanks and determine the molar concentration of NaNO<sub>3</sub>.

#### **Question 55**

A solution is made by dissolving 91.2 grams of  $HNO_3$  in 500.0 mL of solution. Fill in the blanks and determine the molar concentration of  $HNO_3$ .