

# Exercise 7.3b

## Mole-Mass & Mass-Mole Conversions

Name: \_\_\_\_\_

Date: \_\_\_\_\_ Per: \_\_\_\_\_

### One Step: Mole → Mass Conversions

$$\frac{\text{mol } X}{1 \text{ mol } X} \times \frac{\text{molar mass } X}{1 \text{ mol } X} = \text{_____ g } X$$

### One Step: Mass → Mole Conversions

$$\frac{\text{g } X}{\text{molar mass } X} \times \frac{1 \text{ mol } X}{\text{molar mass } X} = \text{_____ mol } X$$

**DIRECTIONS:** Calculate the mass of:

1. 1.00 mol C<sub>2</sub>H<sub>5</sub>OH

2. 0.638 mol Ba(CN)<sub>2</sub>

3. 0.0100 mol O<sub>2</sub>

4. 7.18 x 10<sup>-4</sup> mol Ar

**DIRECTIONS:** Calculate the number of moles in:

5. 87.4 g CaBr<sub>2</sub>

6. 12.5 g C<sub>2</sub>H<sub>4</sub>

7. 1.25 kg H<sub>2</sub>

8. 146 g He

### One Step: Mole → Particles Conversion

$$\frac{\text{mol } X}{1 \text{ mol } X} \times \frac{6.022 \times 10^{23} \text{ p. } X}{1 \text{ mol } X} = \text{_____ p. } X$$

### One Step: Particle → Mole Conversions

$$\frac{\text{p. } X}{6.022 \times 10^{23} \text{ p. } X} \times \frac{1 \text{ mol } X}{6.022 \times 10^{23} \text{ p. } X} = \text{_____ mol } X$$

**DIRECTIONS:** Calculate the number of representative particles in:

9. 1.26 mol NbI<sub>5</sub>

10. 0.249 mol C<sub>2</sub>H<sub>5</sub>OH

11. 2.00 mol NaCl

12. 0.0250 mol NH<sub>4</sub>IO<sub>3</sub>

# Exercise 11.3a

## Mole-Mass & Mass-Mole Conversions

Name: \_\_\_\_\_

Date: \_\_\_\_\_ Per: \_\_\_\_\_

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**DIRECTIONS:** Calculate the number of moles in:

13.  $4.58 \times 10^{24}$  f.u.  $\text{Ba}(\text{CN})_2$

15.  $8.54 \times 10^{23}$  f.u.  $\text{CaBr}_2$

14.  $2.10 \times 10^{25}$  m.  $\text{O}_2$

16.  $1.35 \times 10^{24}$  atoms Na

## Exercise 7.3b

### Particle-Mass & Mass-Particle Conversions

Name: \_\_\_\_\_

Date: \_\_\_\_\_ Per: \_\_\_\_\_

#### Two Step: Particle → Mass Conversions

$$\frac{\text{p. } X}{6.022 \times 10^{23} \text{ p. } X} \times \frac{1 \text{ mol } X}{1 \text{ mol } X} \times \frac{\text{molar mass } X}{1 \text{ mol } X} = \text{_____ g } X$$

**DIRECTIONS:** Calculate the mass of:

17.  $3.45 \times 10^{24}$  m.  $\text{C}_2\text{H}_5\text{OH}$

18.  $9.17 \times 10^{23}$  f.u.  $\text{Ba}(\text{CN})_2$

19.  $1.45 \times 10^{22}$  m.  $\text{O}_2$

#### Two Step: Mass → Particle Conversions

$$\frac{\text{g } X}{\text{molar mass } X} \times \frac{1 \text{ mol } X}{1 \text{ mol } X} \times \frac{6.022 \times 10^{23} \text{ p. } X}{1 \text{ mol } X} = \text{_____ p. } X$$

**DIRECTIONS:** Calculate the number of particles in:

20. 178 g  $\text{CaBr}_2$

21. 125 g  $\text{C}_2\text{H}_4$

22. 15.2 g He