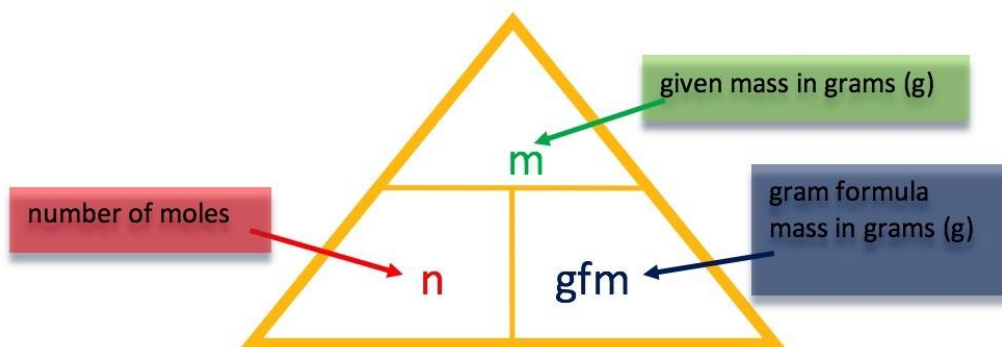


Revision Exercise – Mole Calculations

In these revision exercises you are asked to use the relationship between number of moles, gram formula mass and the mass of a substance to work out the answer. You should be familiar with the triangle formula and how to manipulate it. It is important you also appreciate that the units must be correct.



An Answer guide is available for these questions:

Question 1:

Calculate the mass of one mole of the following compounds:

- | | | |
|----------------------|-----------------------------------|----------------------|
| a) CaO | b) KCl | c) NaBr |
| d) LiCl | e) Fe ₂ O ₃ | f) PbI ₄ |
| g) FeCl ₂ | h) Cu ₂ O | i) CaS |
| j) CuBr | k) Na ₂ O | l) CaCl ₂ |
| m) BaI ₂ | n) CuO | o) CaH ₂ |

Question 2

Find the mass of each of the following:

- | | | |
|------------------------------------|---|-----------------------------------|
| a) 0.2 moles of: AlBr ₃ | b) 0.3 moles of: MgBr | c) 0.25 moles of: RbI |
| d) 3 moles of: K ₂ O | e) 10 moles of: Fe ₂ S ₃ | f) 0.4 moles of: NCl ₃ |
| g) 12 moles of: PbBr ₂ | h) 2 moles of: CuBr | i) 0.5 moles of: BeO |
| j) 0.8 moles of: Cu ₂ S | k) 1.5 moles of: Al ₂ S ₃ | l) 2.4 moles of: PbO ₂ |

Question 3

Find the mass of each of the following:

- a) 2 moles of: Mg(OH)_2 b) 3 moles of: AgNO_3 c) 25 moles of: Cu(OH)_2
d) 0.3 moles of: $\text{Fe}_2(\text{S}_2\text{O}_3)_3$ e) 1.3 moles of: $\text{Pb(NO}_3)_2$ f) 2.4 moles of: BeSO_4
g) 1.2 moles of: NH_4NO_3 h) 0.2 moles of: $\text{Al}_2(\text{SO}_4)_3$ i) 1.5 moles of: $\text{Cu(NO}_3)_2$
j) 4.8 moles of: Fe(OH)_2 k) 1.5 moles of: $\text{Ca(NO}_3)_2$ l) 24 moles of: $(\text{NH}_4)_2\text{CO}_3$
m) 4.8 moles of: $\text{Cu(HSO}_3)_2$ n) 1.5 moles of: $\text{Cu(NO}_3)_2$ o) 24 moles of: Mg(OH)_2

Question 4:

Calculate the number of moles in each of the following masses of compounds:

- a) 2 grams of: AlBr_3 b) 3 grams of: CaO c) 25 grams of: K_2O
d) 0.3 grams of: Fe_2O_3 e) 1.3 grams of: Na_2O f) 2.4 grams of: CaH_2
g) 1.2 grams of: BaI_2 h) 0.2 grams of: FeCl_2 i) 1.5 grams of: CuO
j) 4.8 grams of: PbI_4 k) 1.5 grams of: LiCl l) 24 grams of: CaS
m) 4.8 grams of: KCl n) 1.5 grams of: NaBr o) 24 grams of: Cu_2O

Question 5

Calculate the number of moles in the masses of the following compounds:

- a) 2 grams of: Mg(OH)_2 b) 3 grams of: AgNO_3 c) 25 grams of: Cu(OH)_2
d) 33 grams of: $\text{Fe}_2(\text{S}_2\text{O}_3)_3$ e) 13 grams of: $\text{Pb(NO}_3)_2$ f) 24 grams of: BeSO_4
g) 12 grams of: NH_4NO_3 h) 2 grams of: $\text{Al}_2(\text{SO}_4)_3$ i) 15 grams of: $\text{Cu(NO}_3)_2$
j) 48 grams of: Fe(OH)_2 k) 1.5 grams of: $\text{Ca(NO}_3)_2$ l) 24 grams of: $(\text{NH}_4)_2\text{CO}_3$
m) 4.8 grams of: $\text{Cu(HSO}_3)_2$ n) 15 grams of: $\text{Cu(NO}_3)_2$ o) 24 grams of: Mg(OH)_2