

Name : _____

Date : _____

Moles to Particles Worksheet

Answer the following questions.

- 1 Find the number of phosphorus atoms in 3.44 moles of phosphorus.
- 2 How many moles are present in 3.88×10^{25} Ni atoms?
- 3 Find the number of moles present in 145 g of sodium.
- 4 How much do 6.68 moles of molybdenum weigh?
- 5 How many atoms are present in 36 g of germanium?
- 6 How much do 1.43×10^{28} atoms of polonium weigh?
- 7 How much do 4.55×10^{28} atoms of vanadium weigh?
- 8 How many atoms are present in 5.2 moles of titanium?
- 9 How many moles are present in 7.22×10^{23} chromium atoms?
- 10 How many atoms are present in 400 g of palladium?

Moles to Particles Worksheet

Answers

- 1 Find the number of phosphorus atoms in 3.44 moles of phosphorus.

$$\text{Number of atoms} = 3.44 \times 6.023 \times 10^{23} = 2.07 \times 10^{24} \text{ atoms}$$

- 2 How many moles are present in 3.88×10^{25} Ni atoms?

$$\text{Number of moles} = (3.88 \times 10^{25}) / (6.023 \times 10^{23}) = 64.4 \text{ moles}$$

- 3 Find the number of moles present in 145 g of sodium.

$$\text{Number of moles} = 145 / 23 = 6.3 \text{ moles}$$

- 4 How much do 6.68 moles of molybdenum weigh?

$$\text{Mass of molybdenum} = 6.68 \times 95.94 \text{ grams} = 640.87 \text{ grams}$$

- 5 How many atoms are present in 36 g of germanium?

$$\text{Number of atoms} = (36 / 72.6) \times 6.023 \times 10^{23} = 2.98 \times 10^{23} \text{ atoms}$$

- 6 How much do 1.43×10^{28} atoms of polonium weigh?

$$\text{Number of atoms} = 209 \times [(1.43 \times 10^{28} / 6.023 \times 10^{23})] = 4.96 \times 10^6 \text{ atoms}$$

- 7 How much do 4.55×10^{28} atoms of vanadium weigh?

$$\text{Mass of vanadium} = 50.94 \times [(4.55 \times 10^{28} / 6.023 \times 10^{23})] = 3.8 \times 10^6 \text{ atoms}$$

- 8 How many atoms are present in 5.2 moles of titanium?

$$\text{Number of atoms} = 5.2 \times 6.023 \times 10^{23} \text{ atoms} = 3.1 \times 10^{24} \text{ atoms}$$

- 9 How many moles are present in 7.22×10^{23} chromium atoms?

$$\text{Number of moles} = [(7.22 \times 10^{23} / 6.023 \times 10^{23})] \text{ moles} = 1.198 \text{ moles}$$

- 10 How many atoms are present in 400 g of palladium?

$$\text{Number of atoms} = (400 / 106.4) \times 6.023 \times 10^{23} \text{ atoms} = 2.26 \times 10^{24} \text{ atoms}$$