MASS AND THE MOLE WORKSHEET

Answer the following questions.

1) Find the number of atoms in 3.44 moles of P.

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

3) Find the mass of 4.55×10^{28} atoms of V.

4) How much does 35 moles of tungsten weigh?

5) How many atoms is 5.2 moles of Ti?

6) How many moles are present 0.55 g of Mg?

7) How many atoms is 3.75 moles of Fe?

8) Find the number of moles in 145 g of Na.

1) Find the number of atoms in 3.44 moles of P.

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

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

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

3) Find the mass of 4.55×10^{28} atoms of V.

Molar mass of V = 50.9415 g/mol

Mass of 4.55×10^{28} atoms of V = $[(4.55 \times 10^{28})/(6.023 \times 10^{23})] \times 50.9415$ = 3.8×10^{6} grams

4) How much does 35 moles of tungsten weigh?

Molar mass of W = 183.84 g/mol

Mass of 35 moles of W = 35×183.84 grams = 6434 grams

5) How many atoms is 5.2 moles of Ti?

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

6) How many moles are present 0.55 g of Mg?

Molar mass of Mg = 24.3 g/mol

Number of moles = $(0.55/24.3)$ = 0.0226 moles ~ 0.023 moles

7) How many atoms is 3.75 moles of Fe?

Number of atoms = $3.75 \times 6.023 \times 10^{23}$ atoms = 2.26×10^{24} atoms

8) Find the number of moles in 145 g of Na.

Molar mass of Na = 23 g/mol

Number of moles = $(145/23)$ = 6.3 moles