Name: _____ Date: _____

# Mole Problems Worksheet

Balance the following equations and answer the respective questions.

1. How many molecules are present in the following amount of moles?

(a) 2 moles

(b) 0.75 moles

(c) 23 moles

(d) 0.45 moles

(e) 32 moles

2. How many moles are present in the following?

(a) $6.023 \times 10^{23}$

(b) $3.4 \times 10^{24}$

(c) $7.5 \times 10^{20}$

(d) $1.204 \times 10^{24}$

(e) $1.5 \times 10^{20}$

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Answers

1. How many molecules are present in the following amount of moles?

(a) 2 moles

Number of molecules = $2 \times 6.023 \times 10^{23} = 1.2 \times 10^{24}$

(b) 0.75 moles

Number of molecules = $0.75 \times 6.023 \times 10^{23} = 4.5 \times 10^{23}$

(c) 23 moles

Number of molecules = $23 \times 6.023 \times 10^{23} = 1.38 \times 10^{25}$

(d) 0.45 moles

Number of molecules = $0.45 \times 6.023 \times 10^{23} = 2.7 \times 10^{23}$

(e) 32 moles

Number of molecules = $32 \times 6.023 \times 10^{23} = 1.92 \times 10^{25}$

2. How many moles are present in the following?

(a) $6.023 \times 10^{23}$

Number of moles = $(6.023 \times 10^{23})/(6.023 \times 10^{23}) = 1$ mole

(b) $3.4 \times 10^{24}$

Number of moles = $(3.4 \times 10^{24})/(6.023 \times 10^{23}) = 5.6$ moles

(c) $7.5 \times 10^{20}$

Number of moles = $(7.5 \times 10^{20})/(6.023 \times 10^{23}) = 1.24 \times 10^{-3}$ moles

(d) $1.204 \times 10^{24}$

Number of moles = $(1.204 \times 10^{24})/(6.023 \times 10^{23}) = 1.9$ moles

(e) $1.5 \times 10^{20}$

Number of moles = $(1.5 \times 10^{20})/(6.023 \times 10^{23}) = 2.5 \times 10^{-4}$ moles