

## Moles Problems

1. For the reaction $C_6H_6 \rightarrow 6C + 3H_2$ , how many moles of $C_6H_6$ exist for every 3 moles of $H_2$ ?	A. 2    B. 1    C. 4    D. 3
2. For Question#1, how many moles of Carbon (C) exist when there are eight moles of $C_6H_6$ present?	A. 76    B. 50    C. 48    D. 92
3. How many moles of beta particles are created when three moles of $^{235}_{92}U$ are used in the reaction $^{235}_{92}U \rightarrow ^0_{-1}Beta + ^{235}_{91}Np$ ?	A. 3    B. 4    C. 5    D. 9
4. In the reaction $Mg + \_\_HCl \rightarrow H_2 + MgCl_2$ , what number (coefficient) must be placed in front of HCl to balance the chemical equation?	A. 2    B. 3    C. 4    D. 1
5. If it takes two moles of protectant to shield one mole of nuclear waste, how many moles of protectant is needed for $3 \times 10^6$ moles of waste?	A. 30.496    B. $6 \times 10^6$ C. $6.02 \times 10^{23}$ D. $9.4 \times 10^7$
6. If 32 moles of silicon are doped with 16 moles of boron, how many moles of phosphorus are needed to dope the other layer of silicon?	A. 64    B. 32    C. 8    D. 16
7. Find the number of moles of $H_2$ gas that are produced if 3 moles of Hydrochloric acid are used in the reaction $NaF + 2HCl \rightarrow NaF + H_2 + Cl_2$	A. 5    B. 4    C. 6    D. 7
8. Each soda can uses five moles of Aluminum in $2Al + 6HCl \rightarrow 2Al(Cl)_3 + 3H_2$ . How many moles of $H_2$ will be made?	A. 25    B. 20    C. 15    D. 10
9. When element Sp is bombarded in the reaction $Sp + ^1_0n \rightarrow 256J$ . How much energy is produced when 8 moles of Sp are used?	A. 2400J    B. 1024J    C. 900J    D. 2048J
10. An exothermic reaction uses two moles of Chlorine in the reaction $Cl + Pb \rightarrow PbCl + 80J$ . How much energy is produced?	A. 30J    B. 160J    C. 240J    D. 90J