

Solving problem involving mol and chemical equation

Answer the following question by filling in the blank.

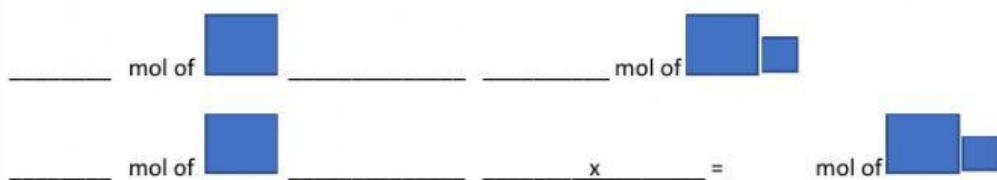
Q1. Chlorine gas react with 0.5 g of potassium metal. What is the volume of chlorine gas that reacts?

RAM; K = 39, Cl = 35.5

Molar volume at RTP = 24 dm³



Number of mole of K = _____ = _____ (write your answer in 2 significant figure)



Volume of gas = _____ x 24 000 = _____ cm³

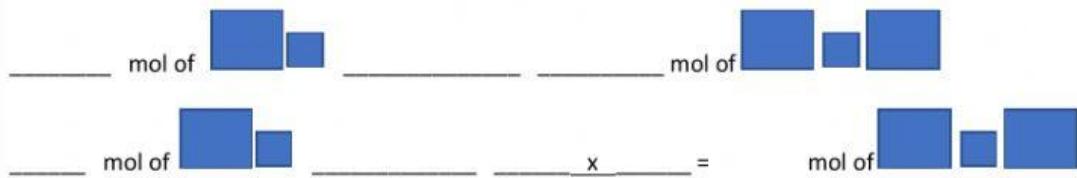
Q2. Sodium metal react burn completely in 1.2 dm³ of oxygen. What is the mass of the product?

RAM; Na = 23, O = 16

Molar volume at RTP = 24 dm³



Number of mole O₂ = _____ = _____



Mass of sodium oxide = _____ x _____ = _____ g

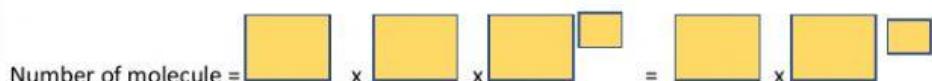
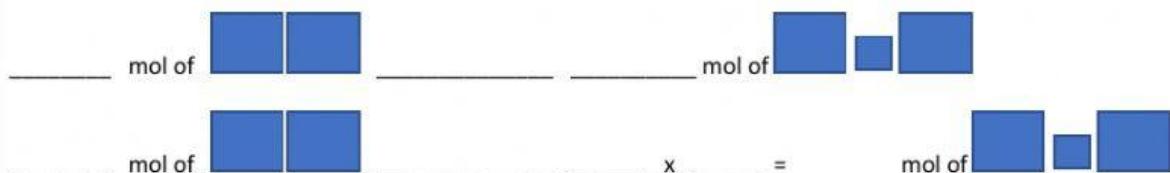
Q3. 2.4 g copper (II) oxide is reduced by hydrogen. What number of molecules of water produced?

Cu = 64, O = 16

Avogadro constant = 6.02×10^{23}



Number of mole of CuO = _____ = _____



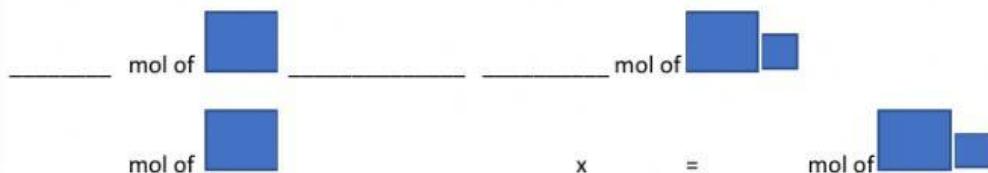
Q4. 2.3 g of magnesium ribbon burn in oxygen. What is volume of oxygen gas that react at STP?

Mg = 24, O = 16

Molar volume at STP = 22.4 dm^3



Number of mole = _____ = _____



Volume of gas = _____ x _____ = _____ dm^3

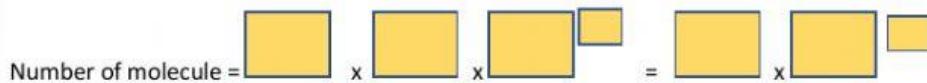
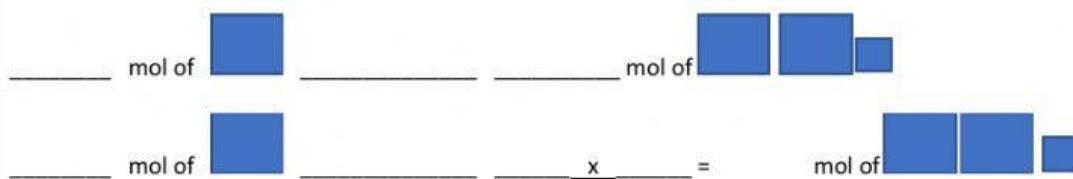
Q5. Displacement of 5g magnesium using copper (II) sulphate solution. What is the number of unit of magnesium sulphate formed?

Mg = 24, Cu = 64, S = 32, O = 16

Avogadro constant = 6.02×10^{23}



Number of mole = _____ = _____ (write answer in 2 significant figure)



Q6. 1.2×10^{23} unit of hydrochloric acid react with zinc metal. What is the volume of hydrogen gas produced in the reaction at STP?

Molar volume at STP = 22.4 dm^3

Avogadro constant = 6.02×10^{23}



Number of mole = $\frac{\text{_____}}{\text{x}}$ = _____



Volume of gas = _____ \times _____ = _____ dm^3