

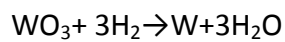
## Answer on Question #72660 - Chemistry – General Chemistry

### Question:

Tungsten metal is manufactured by the reaction of Tungsten Trioxide (WO<sub>3</sub>) with Hydrogen (H<sub>2</sub>). Water is a byproduct of this reaction. How many grams of Tungsten can be produced from  $3.0 \times 10^5$  g of Hydrogen with excess Tungsten Trioxide?

- A. 183.8 g W
- B.  $1.9 \times 10^5$  g W
- C.  $9.1 \times 10^5$  g W
- D.  $9.1 \times 10^6$  g W
- E. None of the Above

### Explanation:



$$n(\text{H}_2) = \frac{m(\text{H}_2)}{M(\text{H}_2)} = \frac{3.0 \times 10^5}{2} = 1.5 \times 10^5 \text{ moles}$$

$$n(\text{W}) = \frac{n(\text{H}_2)}{3} = \frac{1.5 \times 10^5}{3} = 5.0 \times 10^4 \text{ moles}$$

$$m(\text{W}) = n(\text{W}) \cdot M(\text{W}) = 5.0 \times 10^4 \cdot 183.8 = 9.1 \times 10^6 \text{ g}$$

**Answer:** D.  $9.1 \times 10^6$  g W.