When magnesium metal burns in air, it combines with oxygen to form magnesium oxide.

Write the BCE for the above reaction with the proper subscripts.

$$2\,Mg(s) + O_2(g) \rightarrow 2MgO(s)$$

Confirm this with someone!

What type of reaction is this: synthesis

A) How many moles of oxygen are required to produce 10 moles of magnesium oxide?

$$10\ mol\ MgO \times \frac{1\ mol\ O_2}{2\ mol\ MgO} = 5\ mol\ O_2$$

B) How many moles of magnesium oxide are produced by the reaction of 130 g of magnesium?

$$130\ g\ Mg \times \frac{1\ mol\ Mg}{24.3\ g\ Mg} \times \frac{2\ mol\ MgO}{2\ mol\ Mg} \times =$$

C) If 2.60 g of oxygen react, how many moles of magnesium oxide will form?

$$2.60\ g\ O_2 \times \frac{1\ mol\ O_2}{32\ g\ O_2} \times \frac{2\ mol\ MgO}{1\ mol\ O_2} =$$

D) What mass of oxygen combines with 10.00 g of magnesium in this reaction?

$$10.00\ g\ Mg \times \frac{1\ mol\ Mg}{24.3\ g\ Mg} \times \frac{1\ mol\ O_2}{2\ mol\ Mg} \times \frac{32\ g\ O_2}{1\ mol\ O_2} =$$

E) What mass of magnesium oxide will be produced by the reaction of 45.00 g of magnesium?

$$45.00\ g\ Mg \times \frac{1\ mol\ Mg}{24.3\ g\ Mg} \times \frac{2\ mol\ MgO}{2\ mol\ Mg} \times \frac{40.3\ g\ MgO}{1\ mol\ MgO} =$$

F) If 3.6×10^{26} molecules of oxygen are to react, how many moles of magnesium are required?

$$3.6 \times 10^{26}\ molecs\ O_2 \times \frac{1\ mol\ O_2}{6.02 \times 10^{23}\ molecs\ O_2} \times \frac{2\ mol\ Mg}{1\ mol\ O_2} =$$

G) If 1.50 g of magnesium reacts, how many oxygen atoms are involved?

$$1.50\ g\ Mg \times \frac{1\ mol\ Mg}{24.3\ g\ Mg} \times \frac{1\ mol\ O_2}{2\ mol\ Mg} \times \frac{6.02 \times 10^{23}\ molecs\ O_2}{1\ mol\ O_2} \times \frac{2\ atoms\ O}{1\ molec\ O_2}$$