Stoichiometry WS

1. How many moles of nitrogen are formed when 58.6 g of KNO3 decomposes according to the following reaction? The molar mass of KNO3 is 101.11 g/mol.

4 KNO3(s) → 2 K2O(s) + 2 N2(g) + 5 O2(g)

2. Consider the following reaction. How many moles of oxygen are required to produce 2.33 moles of water? Assume that there is excess C3H7SH present.

C3H7SH(l) + 6 O2(g) → 3 CO2(g) + SO2(g) + 4 H2O(g)

Balance the following equation and answer the questions

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| Cu(s) | + | AgNO3(aq) | 🡪 | Cu(NO3)2(aq) | + | Ag(s) |

a. How many moles of Cu will be needed to react with 5 grams of AgNO3?

b How many moles of AgNO3 are needed to produced 5.0 X 1015 molecules of Cu(NO3)2?

c. If 6.5 grams of Ag is produced, how many molecules of Cu are needed?

d If 67.8 g of Cu is reacted with AgNO3, how many particles of Cu(NO3)2  are produced?

e. If 35.2 g of Ag is produced, how many moles of AgNO3 are needed to react?

f. If 4.50 X 1035 molecules of Cu are reacted with excess AgNO3 how many grams of Ag are produced?