1. Sulfur, $S_8$, can be burned in a chlorine atmosphere to form disulfur dichloride, $S_2Cl_2$:

$$S_8(l) + 4Cl_2(g) \rightarrow 4S_2Cl_2(l)$$

a. If you react 32 g of $S_8$ with 71.0 g of $Cl_2$, which material is the limiting reagent? (5 points)

b. If you react 32 g of $S_8$ with 71.0 g of $Cl_2$, how many grams of $S_2Cl_2$ will be produced? (5 points)