

Name: _____

Block: _____

Mole Problems: Review

1. An ionic compound contains 36.8% iron, 21.1% sulfur, and 42.1% oxygen, and has a molar mass of 151.9 g. What is its chemical formula? What is the name of this compound?
2. If you had 684 g of this compound, how many molecules would you have?
3. How many *atoms* of oxygen would those 684 g contain?

4. A 10 g sample of a gas is analyzed and found to contain 2.20 g sulfur and 7.80 g fluorine. Its molecular formula is the same as its empirical formula. What is the molecular formula of the gas?

5. What is the volume of this 10 g sample of gas at S.T.P.?

6. What is the density of the gas in $\frac{\text{g}}{\ell}$? (Hint: the mass is 10 g and you just calculated the volume.)