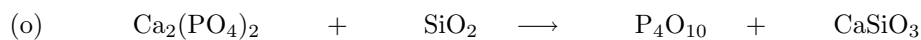
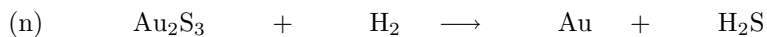
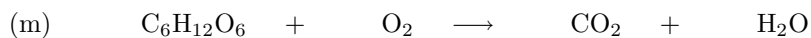
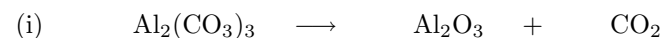
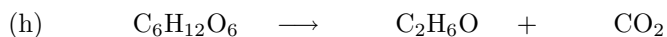
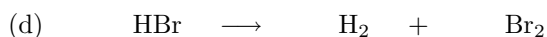
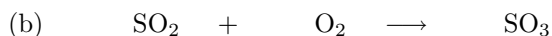


Chemistry 100
Homework Problem Set # 2
Due Friday, September 12

1. Balance the following equations:



2. Identify the ion formed by each of the following elements to acquire a noble gas electron configuration. Also indicate whether electrons are gained or lost, and how many are gained or lost.

example: $\text{Li} \longrightarrow$ - forms Li^+ by losing $1 e^-$

(a) K

(f) Ba

(b) Ca

(g) P

(c) Al

(h) I

(d) F

(i) Rb

(e) S

(j) N

3. Write the formula for each of the following ionic compounds:

- | | |
|-----------------------|-----------------------|
| (a) cesium oxide | (d) aluminum sulfide |
| (b) magnesium oxide | (e) calcium chloride |
| (c) strontium nitride | (f) aluminum chloride |

4. Which of the following pairs of elements are likely to form an ionic compound? *hint: Binary, or two-element, ionic compounds formed from positive metal ions and negatively charged non-metal ions.* Circle all that apply.

- | | |
|--------------------------|---------------------------|
| (a) potassium and oxygen | (d) chromium and oxygen |
| (b) oxygen and carbon | (e) nitrogen and chlorine |
| (c) bromine and sodium | (f) sulfur and oxygen |

5. Name the following **ionic** compounds:

- | | |
|-----------------------|------------------------------------|
| (a) KCl | (c) Rb ₂ O |
| (b) MgCl ₂ | (d) Al ₂ O ₃ |

6. For each of the following, find the number of protons and the number of neutrons. Also write the full nuclear symbol for each.

- | | |
|------------|-----------|
| (a) Pu-239 | (c) Ar-40 |
| (b) N-15 | (d) Br-81 |

7. Complete the following table for electrically neutral atoms of the given isotope (note that the symbol column on the left should contain the full nuclear symbol of the isotope, as it does for ${}_{16}^{32}\text{S}$):

Symbol	Atomic number	Mass number	number of protons	number of neutrons	Number of electrons
	38	90			
${}_{16}^{32}\text{S}$					
			17	18	
		40			20
	6			8	
				143	92

