Worksheet: Assigning Oxidation Numbers

1. Give oxidation numbers of all the elements in the following molecules and ions

a) SO, SO_2, SO_3, SO_3^{2-}, SO_4^{2-}

b) ClO_2, ClO^-, ClO_2^-, ClO_3^-, ClO_4^-

c) N_2, NO, NO_2, N_2O_4, NO_2^-, NO_3^-

2. Determine the oxidation state of the sulfur atom:

a) H_2S *b)* S *c)* H_2SO_4 *d)* HS^- *e)* SO_2 *f)* SO_3

3. What is the oxidation state of the phosphorus in each compound

a) HPO_3 *b)* H_3PO_2 *c)* H_3PO_3 *d)* H_3PO_4 *e)* $H_4P_2O_7$ *f)* $H_5P_3O_{10}$

4. Give the oxidation numbers for the underlined atoms in these molecules or ions

a) $\underline{Cs}_2O$

b) $\underline{Pt}Cl_6^{2-}$

c) $\underline{Ca}I_2$

d) $\underline{Sn}F_2$

e) $\underline{Al}_2O_3$

f) $\underline{Cl}F_3$

g) $H_3\underline{As}O_3$

h) $\underline{Sb}F_6^-$

i) $\underline{Ti}O_2$

j) $\underline{Mo}O_4^{2-}$