Oxidation/Reduction Worksheet Answers

1. Is this reaction a redox reaction? Explain your answer.
   $2K(s) + Br_2(l) \rightarrow 2KBr(s)$

   yes because oxidation numbers are changing

2. Is this reaction a redox reaction? Explain your answer.
   $2NaCl(aq) + Pb(NO_3)_2(aq) \rightarrow 2NaNO_3(aq) + PbCl_2(s)$

   no because oxidation numbers are not changing

3. Which substance loses electrons and which substance gains electrons in this reaction? $2Mg(s) + O_2(g) \rightarrow 2MgO$

   lose: Mg; gain: O

4. Which substance loses electrons and which substance gains electrons in this reaction? $16Fe(s) + 3S_8(s) \rightarrow 8Fe_2S_3(s)$

   lose: Fe; gain: S

5. Which substance is oxidized and which substance is reduced in this reaction?
   $2Li(s) + O_2(g) \rightarrow Li_2O_2(s)$

   oxidized: Li; reduced: O

6. Which substance is oxidized and which substance is reduced in this reaction?
   $2Fe(s) + 3I_2(s) \rightarrow 2FeI_3(s)$

   oxidized: Fe; reduced: I

7. Assign oxidation numbers to the atoms in each substance.

   1. P_4
   2. SO_3
   3. SO_3^{2-}
   4. $Ca_3(PO_3)_2$

   1. *P: 0*
   2. *S: +6; O: -2*
   3. *S: +4; O: -2*
   4. *Ca: +2; P: +3; O: -2*

15. Identify what is being oxidized and reduced in this redox reaction by assigning oxidation numbers to the atoms. $2NO + Cl_2 \rightarrow 2NOCl$

    oxidized: N; reduced: Cl

16. Identify what is being oxidized and reduced in this redox reaction by assigning oxidation numbers to the atoms. $Sr + SO_3 \rightarrow SrSO_3$

    oxidized: Sr; reduced: S