1. (2 points) In the compound $\text{H}_2\text{AsO}_4$, what is the oxidation number of As?
   (a) +4    (b) +5    (c) +6    (d) +8    (e) +7

2. (2 points) Which one of the following is an oxidation-reduction reaction? Note that none is a balanced reaction, but you should not need to balance them.
   (a) $\text{Fe(OH)}_3 + \text{HNO}_3 \rightarrow \text{Fe(NO}_3)_3 + \text{H}_2\text{O}$
   (b) $\text{FeCO}_3 + \text{HNO}_3 \rightarrow \text{Fe(NO}_3)_3 + \text{CO}_2 + \text{H}_2\text{O}$
   (c) $\text{FeCl}_2 + (\text{NH}_4)_2\text{S} \rightarrow \text{FeS} + \text{NH}_4\text{Cl}$
   (d) $\text{Fe(OH)}_2 + \text{Na}_2\text{CO}_3 \rightarrow \text{FeCO}_3 + \text{NaOH}$
   (e) none of the above is an oxidation-reduction reaction

   For each statement below (1 point each), indicate whether the statement is most likely true (A) or most likely false (B). These are "ball park" questions - you do not need a calculator. Pay attention to wording.

3. In order to vaporize 1 g of $\text{H}_2\text{O}$, we need about 4.2 Joules of energy.
   (a) True    (b) False

4. One mole of water vapor (steam) has a higher potential energy than one mole of water solid (ice).
   (a) True    (b) False

5. If heat is added to a system at constant pressure, the process is endothermic.
   (a) True    (b) False

6. If work is done on a system, the system's energy decreases.
   (a) True    (b) False

7. Units for specific heat can be expressed both as $\text{J} / (\text{g} \ \text{K})$ and as $\text{kg} \ \text{m}^2 / \text{s}^2$.
   (a) True    (b) False

8. To heat the water in a bathtub from 10 °C to 30 °C would require about 1000 calories.
   (a) True    (b) False

9. Extra credit. Think carefully! A car traveling at 60 miles per hour has more potential energy than a baseball traveling at 61 miles per hour.
   (a) True    (b) False

Place the number 1 in column K of your OpScan sheet. This is essential!