

Quiz # 2 (April 15, 2008)

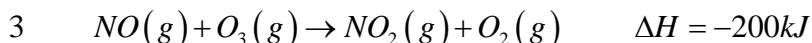
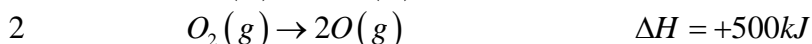
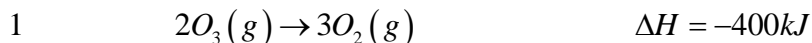
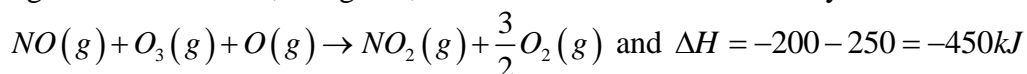
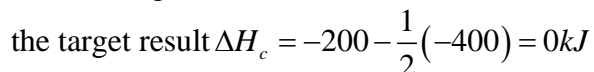
Value: 10 points; Time: 10 minutes

Name KEY

Section \_\_\_\_\_

Compare with problems Z9:50

Q) From the following data:

a) Calculate  $\Delta H$  for the reaction:  $NO(g) + O(g) \rightarrow NO_2(g)$ Rxn 3 given NO and  $NO_2$ , To get O, turn Rxn 2 around and divide by 2 and add.Now need to get rid of  $O_3$ , Multiply Rxn 1 by  $\frac{1}{2}$  and subtract it. This gives target reaction.  $\Delta H_a = -450 + 200 = -250kJ$ b) Calculate  $\Delta H$  for the reaction:  $NO_2(g) \rightarrow NO(g) + O(g)$ This is the target reaction of part a) turned around: So  $\Delta H_b = -\Delta H_a = 250kJ$ c) Calculate  $\Delta H$  for the reaction:  $NO(g) + \frac{1}{2}O_2(g) \rightarrow NO_2(g)$ For this target use reaction 3 and subtract  $\frac{1}{2}$  of reaction 1 to remove the  $O_3$ . This givesd) Calculate  $\Delta H$  for the reaction:  $2NO(g) + O_2(g) \rightarrow 2NO_2(g)$ This is reaction from c but doubled, so it is zero also.  $\Delta H_d = 2\Delta H_c = 0kJ$