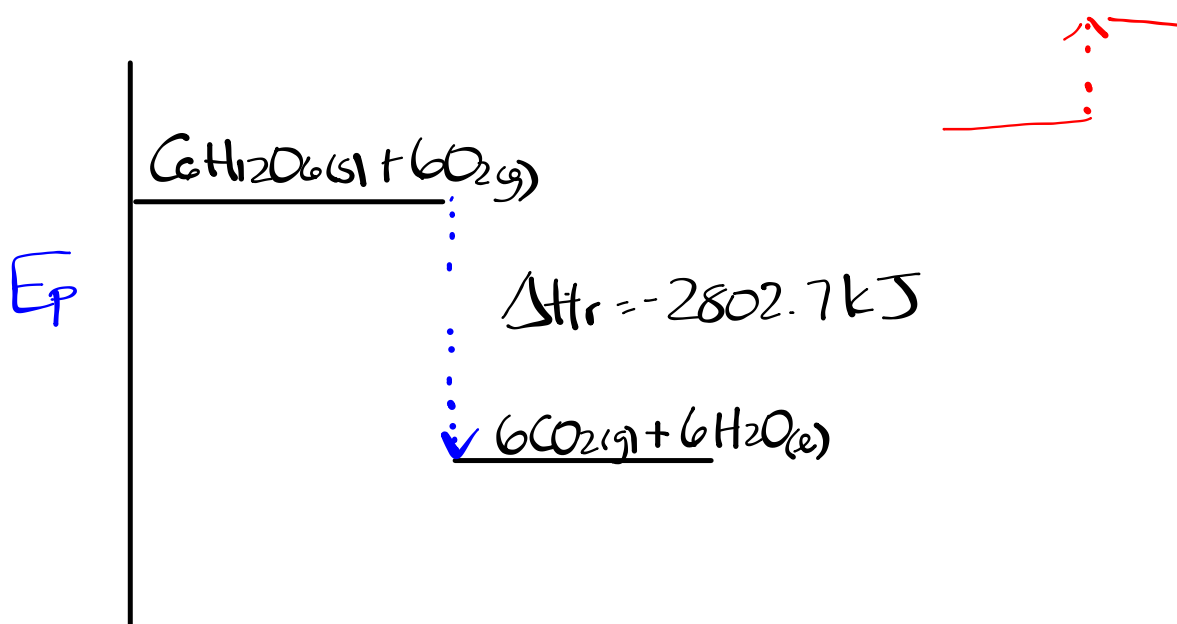


For each of the following reactions:

(a) rewrite the equation including the enthalpy change as a term

(b) draw a potential energy diagram



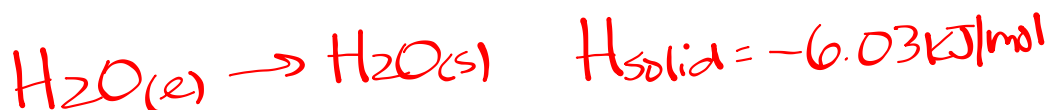
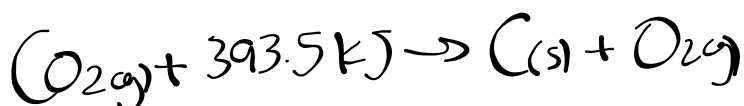
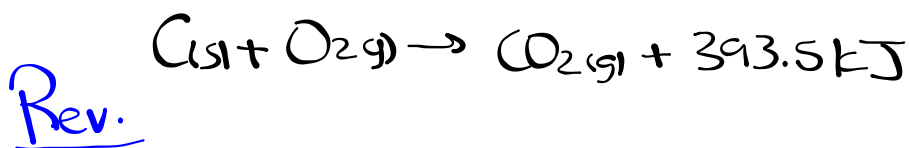
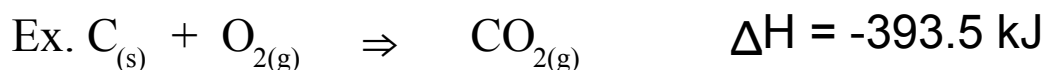
## Predicting Energy Changes using Hess' Law

### Hess' Law - (Heat of Summation)

- allows for the determination of the enthalpy change of a reaction with direct use of calorimetry.

*Rules:*

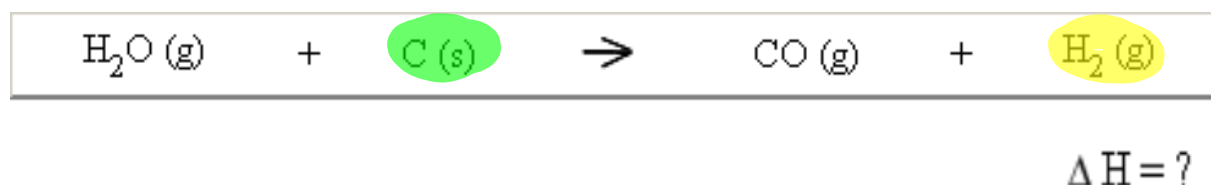
- if a chemical equation is reversed, then the sign of the  $\Delta H_r$  changes
- if the coefficients of a chemical equation are altered by multiplying or dividing by a constant factor, then the  $\Delta H_r$  is altered in the same way



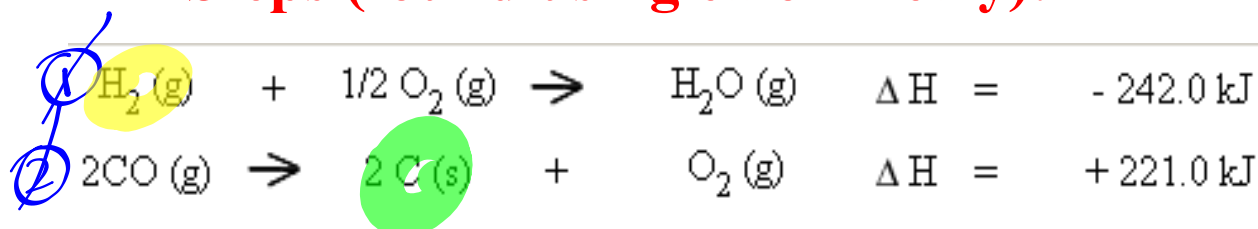
x 2



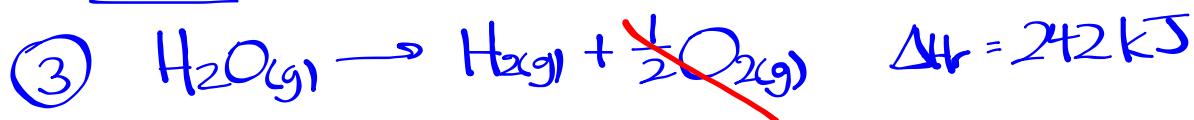
# Example



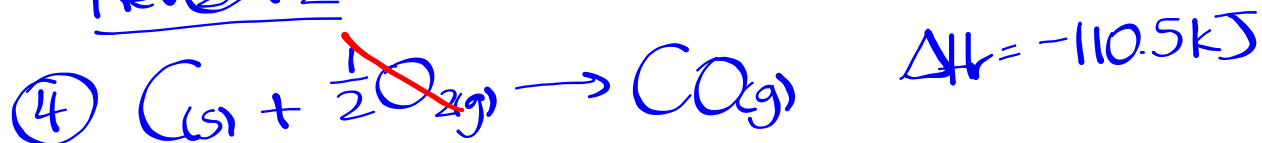
## Steps (found using calorimetry):



Rev ①



Rev ② ÷ 2



③ + ④

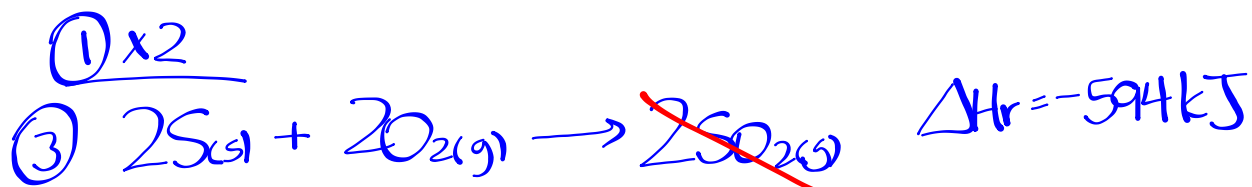


$$\Delta H = 131.5 \text{ kJ}$$

Calculate the heat released by the burning of sulfur in oxygen given the following steps:



### Evidence:



# Worksheet