For the Reaction:

$$2H_2(g) + O_2(g) \rightarrow 2H_2O(g)$$

Estimate the enthalpy of reaction, using the bond energy values.

Bond Energies per mole of bonds is always positive.
(defined as endothermic energy to break bond)

H-H	432 kJ
H-O	467 kJ
O=O	495 kJ

Reactants Bonds Broken		Products Bonds Formed
H-H 432 kJ H-H 432 kJ O=O 495 kJ		-467 kJ H–O–H -467 kJ -467 kJ H–O–H -467 kJ
Total 1359 kJ		Total -1868 kJ
Estimated Net Change in Enthalpy ΔH_{rxn} = -509 kJ / mol$_{rxn}$ (meaning 2 mol $H_2O(g)$)		

Alternately this equation will work also since it will assign the negative sign to the products.

ΔH_{rxn}= Σ Bond energy reactants - Σ Bond energy products

ΔH_{rxn} = (432 kJ × 2 + 495 kJ) - (467 kJ ×4)

ΔH_{rxn} = - 509 kJ for the reaction $2H_2(g) + O_2(g) \rightarrow 2H_2O(g)$

Bond energies are estimated, and this will be an approximate value.