Quiz 5.4 - Hess's Law

Name:

Question 1 (2 points)

Consider the reaction:
$$H_2S(g) + 2O_2(g) \longrightarrow H_2SO_4(l)$$
 $\Delta H_{rxn} = -235.5 \frac{kJ}{mol}$
Find ΔH_{rxn} for the reaction: $2H_2SO_4(l) \longrightarrow 2H_2S(g) + 4O_2(g)$

Question 2 (3 points)

Find ΔH_{rxn} for reaction (\star) using reactions (A), (B), and (C)

$$(\star)\, {\rm N_2(g)} + {\rm 2}\, {\rm O_2(g)} \, \longrightarrow \, {\rm 2}\, {\rm NO_2(g)} \qquad \Delta H_{rxn} = \,? \label{eq:delta_rxn}$$

$$(A)$$
 N₂(g) + 3 H₂(g) \longrightarrow 2 NH₃(g) $\Delta H_{rxn} = -115 \frac{kJ}{mol}$

$$(B) 2 NH3(g) + 4 H2O(l) \longrightarrow 2 NO2(g) + 7 H2(g) \qquad \Delta H_{rxn} = -142.5 \frac{kJ}{mol}$$

$$\bigcirc$$
 2 H₂O(l) \longrightarrow 2 H₂(g) + O₂(g) $\Delta H_{rxn} = -87.4 \frac{kJ}{mol}$

[i carry your heart with me(i carry it in]

By ee cummings

i carry your heart with me(i carry it in my heart)i am never without it(anywhere i go you go,my dear;and whatever is done by only me is your doing,my darling)

i fear

no fate(for you are my fate,my sweet)i want no world(for beautiful you are my world,my true) and it's you are whatever a moon has always meant and whatever a sun will always sing is you

here is the deepest secret nobody knows (here is the root of the root and the bud of the bud and the sky of the sky of a tree called life; which grows higher than soul can hope or mind can hide) and this is the wonder that's keeping the stars apart

i carry your heart(i carry it in my heart)