Hess's Law Homework

Pg 316 # 41-50

$2NO_2 \rightarrow N_2O_4$

41) $N_2 + 2O_2 \rightarrow 2NO_2 \quad \Delta H = 66.4\ kJ$

$N_2 + 2O_2 \rightarrow N_2O_4 \quad \Delta H = 11.1\ kJ$

i)(x-1) $2NO_2 \rightarrow N_2 + 2O_2 \quad \Delta H = -66.4\ kJ$

ii) $N_2 + 2O_2 \rightarrow N_2O_4 \quad \Delta H = 11.1\ kJ$

$-55.3\ kJ.$

42) $3C_2H_2 \rightarrow C_6H_6$

$C_2H_2 + \frac{5}{2}O_2 \rightarrow 2CO_2 + H_2O$

$C_6H_6 + \frac{15}{2}O_2 \rightarrow 6CO_2 + 3H_2O$

i)(x3) $3C_2H_2 + \frac{15}{2}O_2 \rightarrow 6CO_2 + 3H_2O \quad \Delta H = -3903.3\ kJ$

ii)(x-1) $6CO_2 + 3H_2O \rightarrow C_6H_6 + \frac{15}{2}O_2 \quad \Delta H = 3267.6\ kJ$

$-635.7\ kJ.$

43) $N_2H_4 + 2H_2O_2 \rightarrow N_2 + 4H_2O$

$H_2 + \frac{1}{2}O_2 \rightarrow H_2O \quad \Delta H = -285.8\ kJ$

$N_2H_4 + O_2 \rightarrow N_2 + H_2O \quad \Delta H = -622.0\ kJ$

$H_2 + O_2 \rightarrow H_2O_2 \quad \Delta H = -188.0\ kJ$