5.72D

ΔH_{rxn}

$Fe_2O_{3(s)} + 6HCl_{(g)} \Rightarrow 2FeCl_{3(s)} + 3H_2O_{(g)}$

$\Delta H_{rxn} = [2(\Delta H f_{FeCl_3(s)}) + 3(\Delta H f_{H_2O(g)})] - [\Delta H f_{Fe_2O_3(s)} + 6(\Delta H f_{HCl(g)})]$

$= [2(-406) + 3(-241.82)] - [-822.16 + 6(-92.3)]$

$= -149.5\ kJ$

Oct 20-7:39 AM

Hess's Law

① Reactant → I_1 ΔH_1

② I_1 → I_2 ΔH_2

③ I_2 → Product + ΔH_3

⇒ Reactant → Product $\Delta H = \Sigma \Delta H_1 + \Delta H_2 + \Delta H_3$

ADD

Oct 20-8:00 AM

given { $C_{(graphite)} + O_2 \rightarrow CO_2$ $\Delta H_1 = -393.5\ KJ$; $C_{(diamond)} + O_2 \rightarrow CO_2$ $\Delta H_2 = -395.4\ KJ$

Find ΔH for $C_{(graphite)} \rightarrow C_{(diamond)}$

$C_{(graphite)} + O_2 \rightarrow CO_2$ $\Delta H_1 = -393.5\ KJ$

$CO_2 \rightarrow C_{(diamond)} + O_2$ $\Delta H_2 = +395.4\ KJ$

$C_{(graphite)} \rightarrow C_{(diamond)}$ $+1.9\ KJ$

Oct 20-8:04 AM

Given ✓ $C_{(s)} + O_{2(g)} \rightarrow CO_{2(g)}$ $\Delta H_1 = -393.5\ KJ$

$CO_{(g)} + \frac{1}{2} O_{2(g)} \rightarrow CO_{2(g)}$ $\Delta H_2 = -283\ KJ$

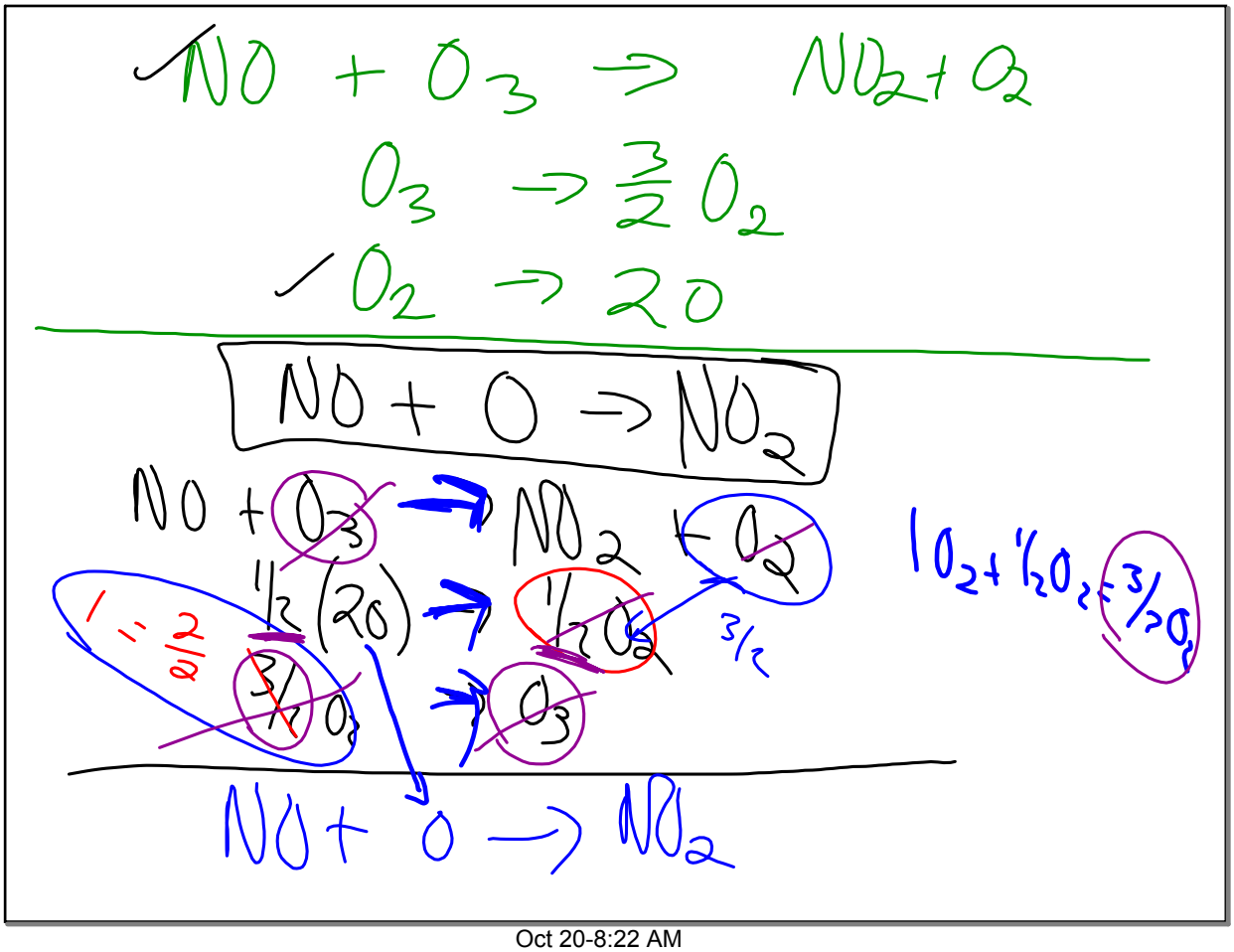
FIND: $C_{(s)} + \frac{1}{2} O_{2(g)} \rightarrow CO_{(g)}$ $\Delta H = ?$

$C_{(s)} + \frac{1}{2} O_{2(g)} \rightarrow CO_{2(g)}$ $-393.5\ KJ$

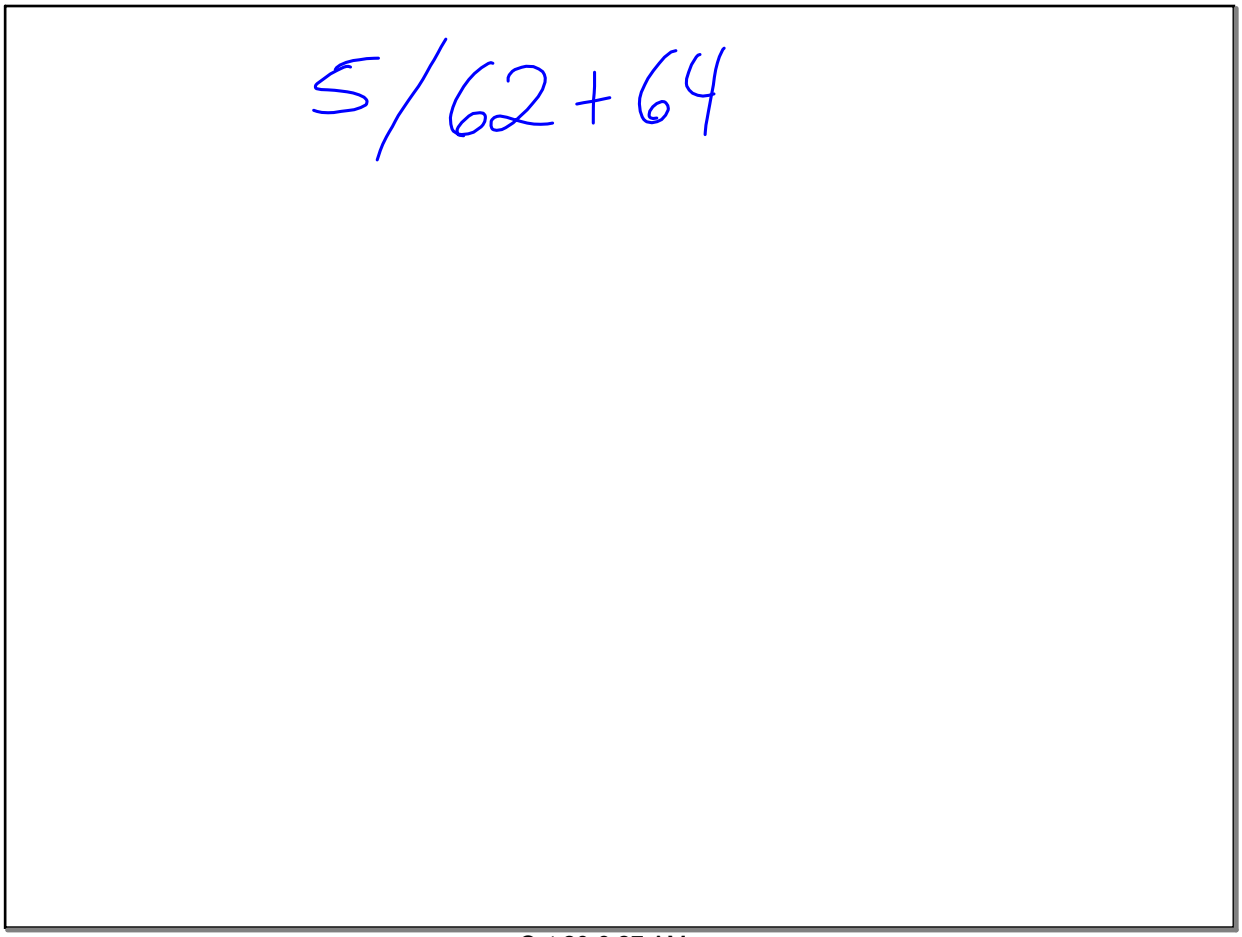
$CO_{2(g)} \rightarrow CO + \frac{1}{2} O_2$ $+283\ KJ$

$C_{(s)} + \frac{1}{2} O_{2(g)} \rightarrow CO$ $-110.5\ KJ$

Oct 20-8:14 AM



Oct 20-8:22 AM



Oct 20-8:27 AM