**14.1** (a) $-\dfrac{1}{2}\dfrac{\Delta[O_3]}{\Delta t} = \dfrac{1}{3}\dfrac{\Delta[O_2]}{\Delta t}$

(b) $-\dfrac{1}{2}\dfrac{\Delta[HOF]}{\Delta t} = \dfrac{1}{2}\dfrac{\Delta[HF]}{\Delta t} = \dfrac{\Delta[O_2]}{\Delta t}$

** The question numbers are wrong, they should be 11 & 13.)

**14.13** (a) The reaction is second order in $[NO]$ and first order in $[O_2]$.

(b) Rate $= \dfrac{-\Delta[NO]}{\Delta t} = k[NO]^2[O_2]$

(c) $k = 25\ L^2/mol^2 \cdot s$

(d) Rate $= 2.8 \times 10^{-5}\ mol/L \cdot s$

(e) When $-\Delta[NO]/\Delta t = 1.0 \times 10^{-4}\ mol/L \cdot s$, $\Delta[O_2]/\Delta t = 5.0 \times 10^{-5}\ mol/L \cdot s$ and $\Delta[NO_2]/\Delta t = 1.0 \times 10^{-4}\ mol/L \cdot s$.

**14.15** (a) Rate $= -\Delta[NO]/\Delta t = k[NO]^2[O_2]$

(b) $50.\ L^2/mol^2 \cdot h$

(c) Rate $= 8.4 \times 10^{-9}\ mol/L \cdot h$