

$$t_{1/2} = \frac{1}{k[\text{NOBr}]} \quad \text{1st prob.}$$

$$= \frac{1}{(1.0 \times 10^{-5} \text{ M}^{-1} \text{ s}^{-1})(1.00 \times 10^{-1} \text{ M})}$$

$$= 1.0 \times 10^6 \text{ s}$$

$$\frac{1}{[\text{NOBr}]_t} = kt + \frac{1}{[\text{NOBr}]_0}$$

$$= (1.0 \times 10^{-5} \text{ M}^{-1} \text{ s}^{-1})(3600 \text{ s}) +$$

$$\frac{1}{1.00 \times 10^{-1} \text{ M}}$$

$$\frac{1}{[\text{NOBr}]_t} = 10.036 \text{ M}^{-1}$$

$$[\text{NOBr}]_{1 \text{ hr}} = 0.0996 \text{ M}$$