



assume *step 2* is rate determining (**slow**)

rate = $k_2[\text{Br}^\cdot][\text{C}_5\text{H}_{12}]$ $\text{Br}^\cdot =$ intermediate

rate = $k_2 k' [\text{Br}_2]^{1/2} [\text{C}_5\text{H}_{12}]$ $K_{\text{eq}} = \frac{[\text{Br}^\cdot]^2}{[\text{Br}_2]}$

rate = $k' [\text{Br}_2]^{1/2} [\text{C}_5\text{H}_{12}]$

1 1/2 order reaction

$$[\text{Br}^\cdot] = K_{\text{eq}}^{1/2} [\text{Br}_2]^{1/2}$$