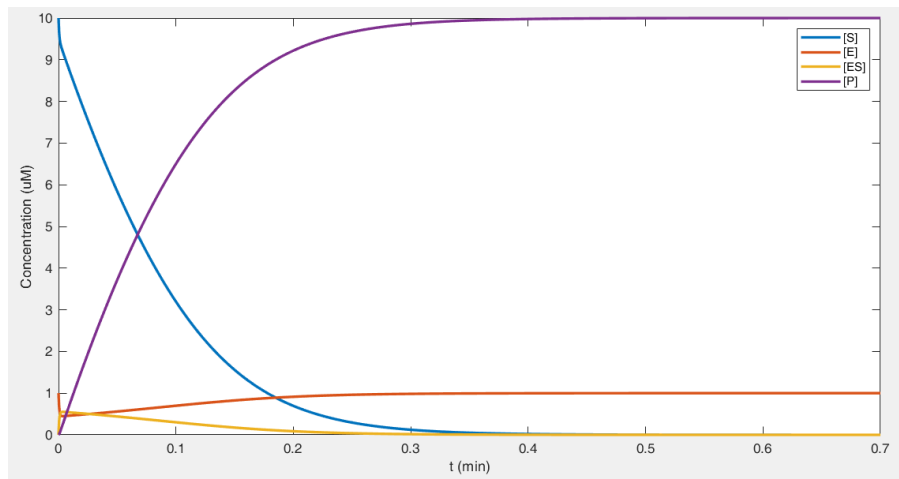


**1.** According to the law of mass, the system of differential equations can be derived as follows :

$$\begin{aligned}\frac{d[S]}{dt} &= -k_1[E][S] + k_2[ES] \\ \frac{d[E]}{dt} &= -k_1[E][S] + (k_2 + k_3)[ES] \\ \frac{d[ES]}{dt} &= k_1[E][S] - (k_2 + k_3)[ES] \\ \frac{d[P]}{dt} &= k_3[ES]\end{aligned}$$

**2.** The result of above formula



**3.** Draw V-[S] line and find the maximum

$$V = \frac{d[P]}{dt}$$

