8.1 $E+S \underset{K_2}{\overset{K_1}{\rightleftharpoons}} ES \xrightarrow{K_3} E+P$

$K_1 = C_1 \cdot c(E) \cdot c(S)$

$K_2 = C_2 \cdot c(ES)$

$K_3 = C_3 \cdot c(ES)$

$\Delta E = \frac{d(E)}{dt} = K_2 + K_3 - K_1$

$\Delta S = \frac{d(S)}{dt} = K_2 - K_1$

$\Delta ES = \frac{d(ES)}{dt} = K_1 - K_2 - K_3$

$\Delta P = \frac{d(P)}{dt} = K_3$

8.2

$y_1 = E$

$y_2 = S$

$y_3 = ES$

$y_4 = P$

$$\begin{cases} y_1' = 750 y_3 - 100 y_1 y_2 \\ y_1(0) = 1 \end{cases} \quad \begin{cases} y_3' = -y_1' \\ y_3(0) = 0 \end{cases}$$

$$\begin{cases} y_2' = 600 y_3 - 100 y_1 y_2 \\ y_2(0) = 10 \end{cases} \quad \begin{cases} y_4' = 150 y_3 \\ y_4(0) = 0 \end{cases}$$

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