$$E + S \underset{k_2}{\overset{k_1}{\rightleftharpoons}} ES \overset{k_3}{\rightarrow} E + P$$

8.1 By law of mass action

$v = k[E][S]$

$vE = vS = k_2 - k_1$

$vES = -k_3$

$vP = vE = k_3$

8.2 $[E]_i = 1 \mu M$

$[S]_i = 10 \mu M$

$[ES]_i = [P]_i = 0$

$k_1 = 100/\mu M /min$, $k_2 = 600/min$, $k_3 = 150/min$