1,The rate of changes:

E:$V_E = \frac{k_3[E_0][S]}{\frac{k_2+k_3}{k_1}+[S]}$

S: $V_S = k_2[ES] = \frac{k_2 V_p}{k_3}$

P:$V_p = \frac{k_3[E_0][S]}{\frac{k_2+k_3}{k_1}+[S]}$

ES:$V_{ES} = k_1[E][S] = (k_2 + k_3)[ES]$

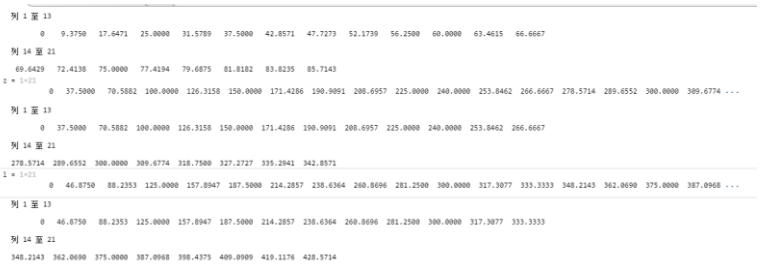
2,

$\%\frac{k_2+k_3}{k_1} = 7.5, k_3[E_0] = 150$

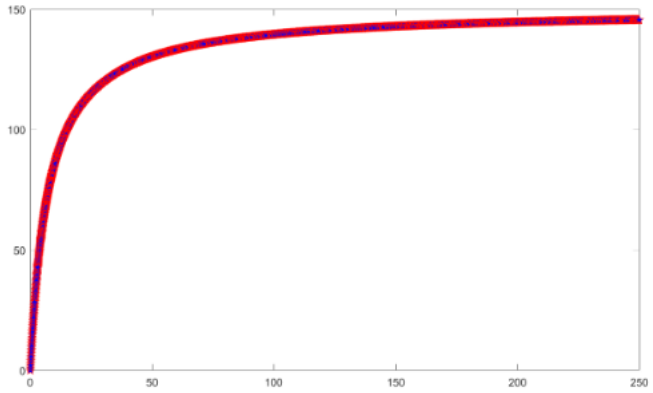
f=@(x,y)(150/(x+7.5))-(y/(x+7.5));%This is the function of V_p

```
x = 0: 0.5: 10; %means the range of S
y0 = 0;
y = RK (f, x, y0);
disp(y) %out put the V_p
z=4*y
disp(z)%out put the  V_S
l=5*y
disp(l) %out put the  V_ES
function y = RK(f, x, y0) %set the function
y = 0 * x;
y(1) = y0;
h = x(2) - x(1);
n = length(x);
for m = 1 : n-1
k1 = f(x(m), y(m));
k2 = f(x(m)+h/2, y(m)+h*k1/2);
k3 = f(x(m)+h/2, y(m)+h*k2/2);
k4 = f(x(m)+h, y(m)+h*k3);
y(m+1) = y(m) + h*(k1 + 2*k2 + 2*k3 + k4) / 6;
end
end
```

my result:



3,



I can see that at lower concentrations, there is a straight line. And at higher concentrations, a stable value is reached, at which point it is the maximum value. The figure is nearly 145.