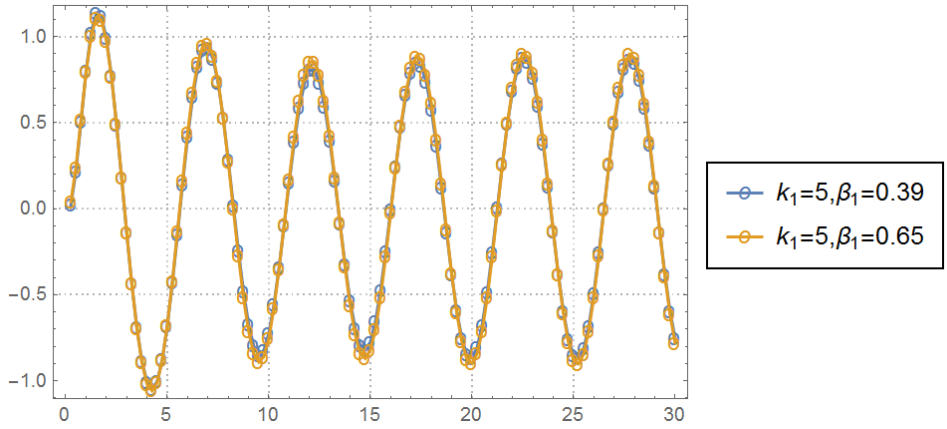
The given time integration method was solved to obtain u_2, $\dot{u}_2$, $\ddot{u}_2$, u_3, $\dot{u}_3$, and $\ddot{u}_3$ (code attached on subsequent pages)

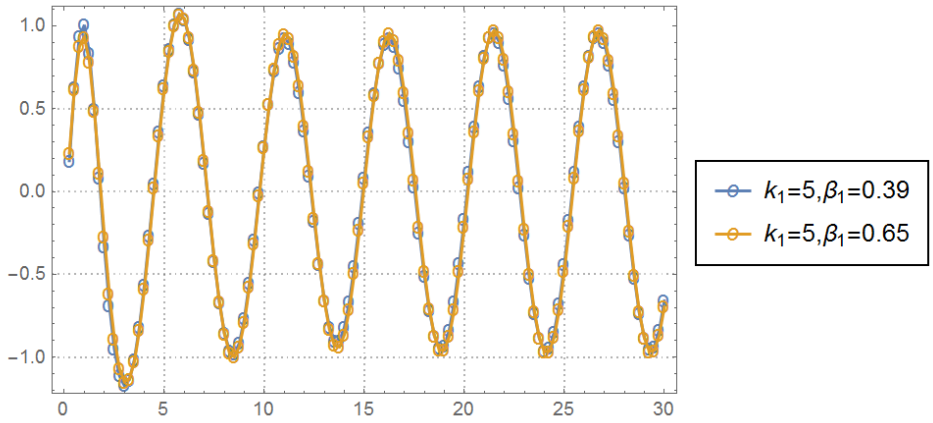
<u>At node 2</u>:

For $\mathbf{k = 5}$,

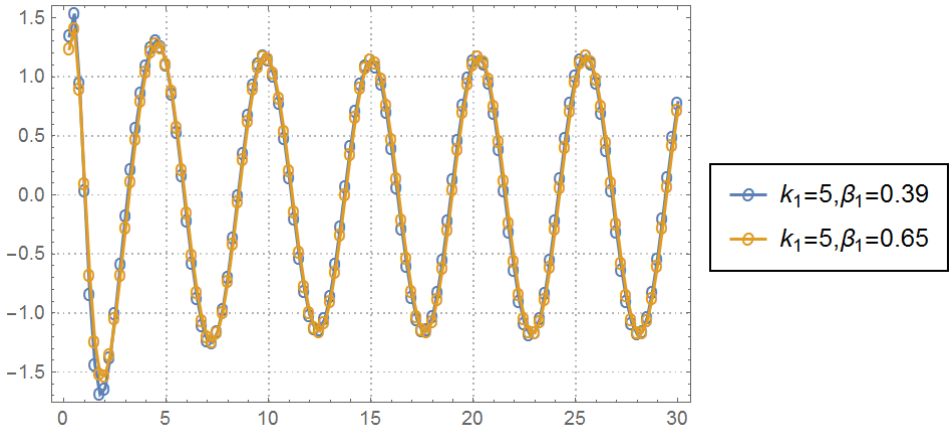
- the following figure gives u_2 with respect to time t:



- the following figure gives $\dot{u}_2$ with respect to time t:

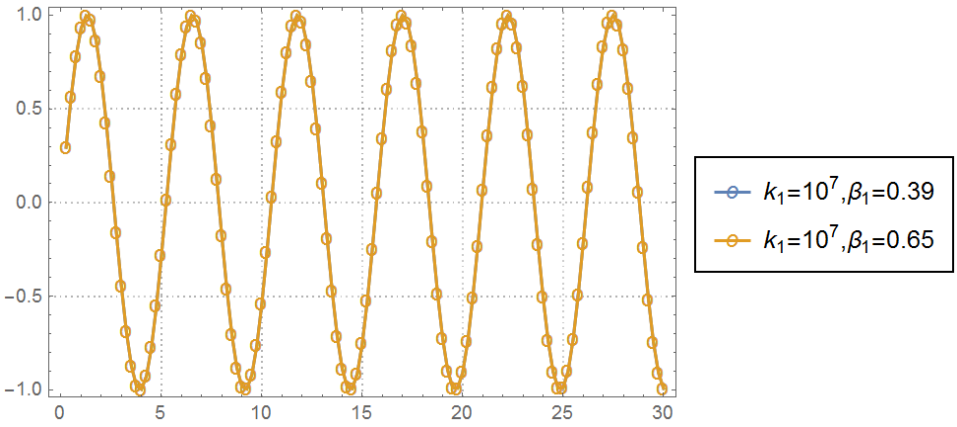


- the following figure gives $\ddot{u}_2$ with respect to time t:

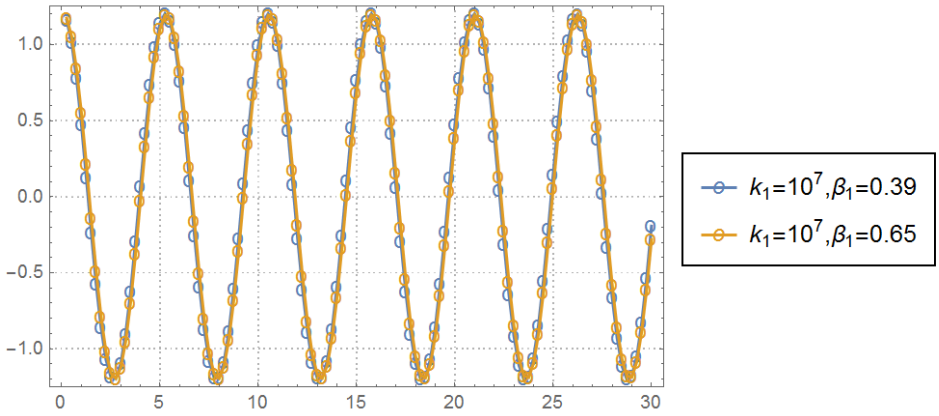


For $\mathbf{k} = \mathbf{10^7}$,

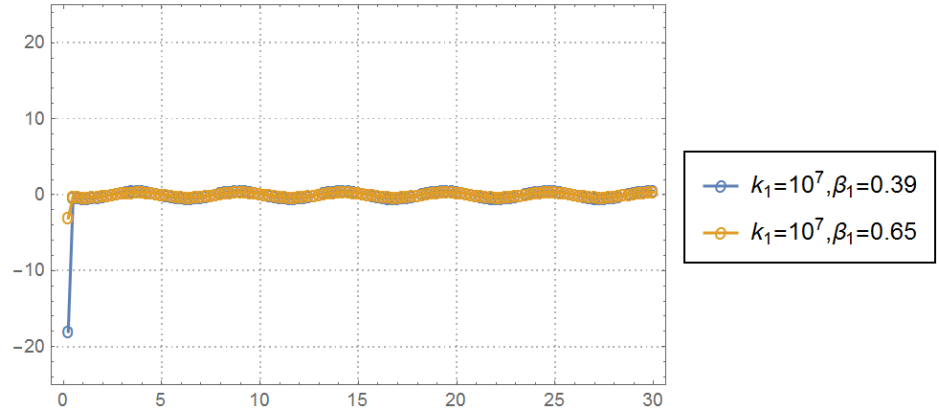
- the following figure gives u_2 with respect to time t:



- the following figure gives $\dot{u}_2$ with respect to time t:



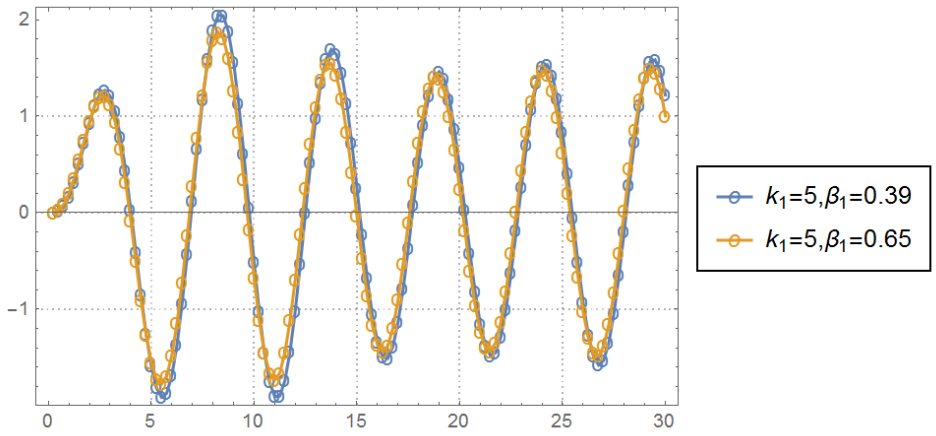
- the following figure gives $\ddot{u}_2$ with respect to time t:



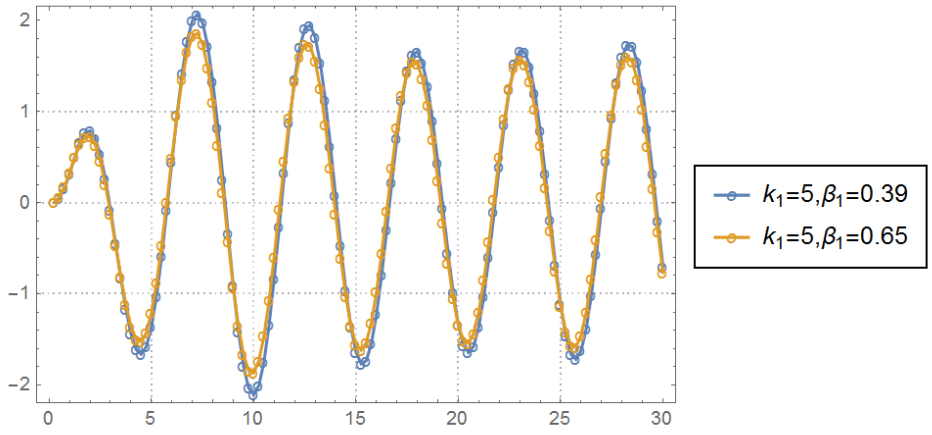
At node 3:

For $\mathbf{k = 5}$,

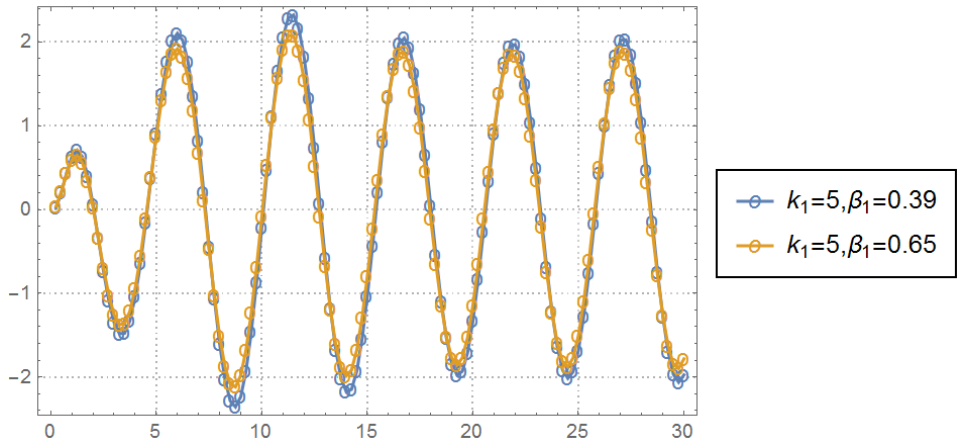
- the following figure gives u_3 with respect to time t:



- the following figure gives $\dot{u}_3$ with respect to time t:

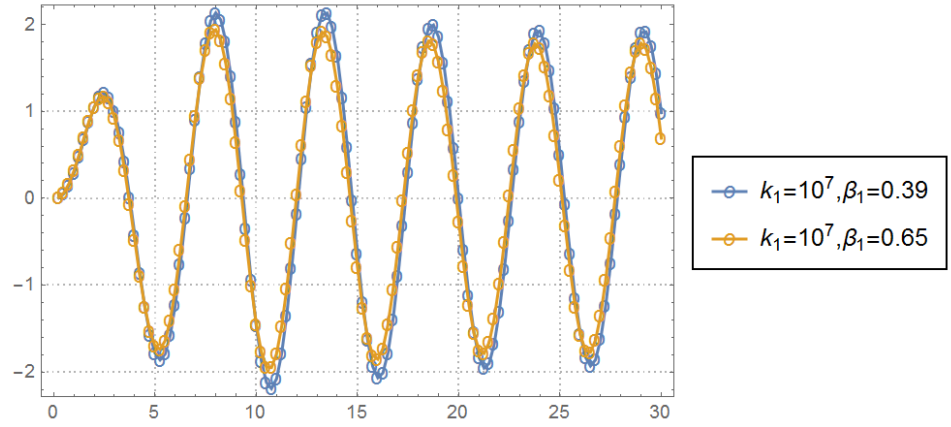


- the following figure gives $\ddot{u}_3$ with respect to time t:

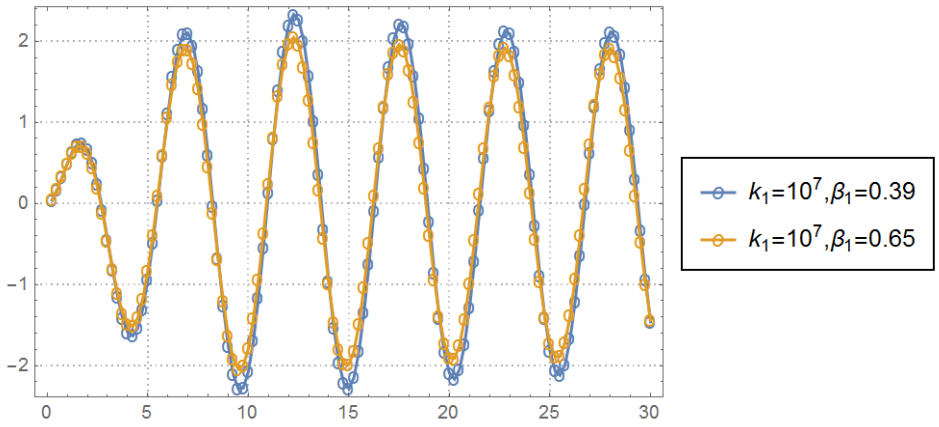


For $\mathbf{k = 10^7}$,

- the following figure gives u_3 with respect to time t:



- the following figure gives $\dot{u}_3$ with respect to time t:



- the following figure gives $\ddot{u}_3$ with respect to time t: