

$\alpha_n$	Coefficient of $\alpha_5$ in Eq 3	Absolute change in soln for $\alpha_n$
	1.001	
$\alpha_1$	-1.81478	0.02876
$\alpha_2$	-0.016154	0.01055
$\alpha_3$	1.65059	0.00665
$\alpha_4$	0.40739	0.01438
$\alpha_5$	1.02213	0.00023

The largest absolute change in the solution is that for  $\alpha_1$ ; it is almost thirty times larger than the change in the coefficient of  $\alpha_5$  in Eq 3. Hence the solution is unstable w.r.t small changes in the coefficient of  $\alpha_5$  in Eq 3 (the set of Eq.s is ill conditioned w.r.t small changes in the coefficient of  $\alpha_5$  in Eq 3). Many of the other values for the  $\alpha_n$ s also change by factors more than ten over the change in the coefficient of  $\alpha_5$ .

In conclusion, I would say that the set of equations is absolutely ill conditioned, since if it is absolutely ill conditioned in any circumstance, it is absolutely ill conditioned.

Very  
good

3/3  
2/2