REPORT

Now lets start with the diagram of questioon. As k1 and k2 springs are joined in parellel with a spring of stifness k3 in series and the force is applied at the other end of spring 3. Now as the 1&2 are connected in parellel there for, it equivalent stifness is Kp=(K1+K2)=700+150u1. Now equivalent spring is conneted to spring 3 in series there net equivalent stifness is Ke=(KpXK3/(Kp+K3)).

Now from balancing the spring force we get,
f1(u1,u2)=700+150u1-F;
f2(u1,u2)= (700+150u1)X(200+100u2)Xu2/(900+150u1+100u2)-F;

Analytical solution:
F=700+150u1
u1=(F-700)/150
u1=350-700/150
=-350/150
=-2.33units

Now,
(700+150x(-2.33))X(200+100u2)Xu2=350(900+150X(-2.33)+100u2
35050u2^2+66600u2-667=0
u2=9.96X10^(-3) units