Polyprotic acids contain more than one dissociable proton. Each dissociation step has its own acid-dissociation constant, Ka1, Ka2, etc. For example, a diprotic acid H2A reacts as follows:

H2A(aq) + H2O(l) H3O+(aq) +HA-(aq)

Ka1=[H3O+][A2-]

[H2A]

HA-(aq) +H2O(l) <-> H3O+(aq) +A2- (aq)

Ka2=[H3O+][A2-]

[HA-]

In general, Ka2=[A2-] for a solution of a weak diprotic acid because [H3O+][HA-]

Many household cleaning products contain oxalic acid, H2C2H4, a diprotic acid with the following dissociation constants: Ka1 =5.9\*10-2 and Ka2 =6.4\*10-5 .

Calculate the equilibrium concentration of H3O+ in a 0.20 M solution of oxalic acid –

H3O+ = 0.083 M

Calculate the equilibrium concentration of C2O42- in a 0.20 M solution of oxalic acid ----

C2O42- = 6.4\*10-5 M

Question I need help with and please include work

Calculate the equilibrium concentration of HC2O4-  in a ).20 M solution of oxalic acid.

HC2O4- = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_