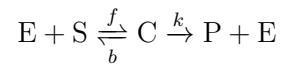1. A well-known chemical reaction is the one used by Michaelis and Menten to describe the action of enzymes:

$$E + S \underset{b}{\overset{f}{\rightleftharpoons}} C \overset{k}{\rightarrow} P + E$$

for enzymes E, substrate S, product P, and enzyme-substrate complex C.

Write down the four rate equations and the two conservation laws for this system. Check your answer with Sec 2.10 of the Course Notes at

https://swainlab.bio.ed.ac.uk/psb/lectures/notes.pdf

2. A human fibroblast has a volume of 10^4 μm^3. What is the minimum possible molar concentration for this cell?