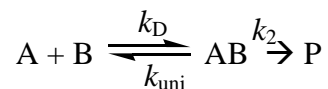Please write solutions neatly on a separate sheet of paper. Show all of your work and report answers with the correct significant figures and units.

1. Use the steady state approximation to show that for the reaction:

$$A + B \xrightleftharpoons[k_{uni}]{k_D} AB \xrightarrow{k_2} P$$

the rate of change of [B] can be written as:

$$-\frac{d[B]}{dt} = \frac{k_2 k_D [A][B]}{k_{uni} + k_2}$$

2. Steinfeld #4.4

3. Steinfeld #4.1