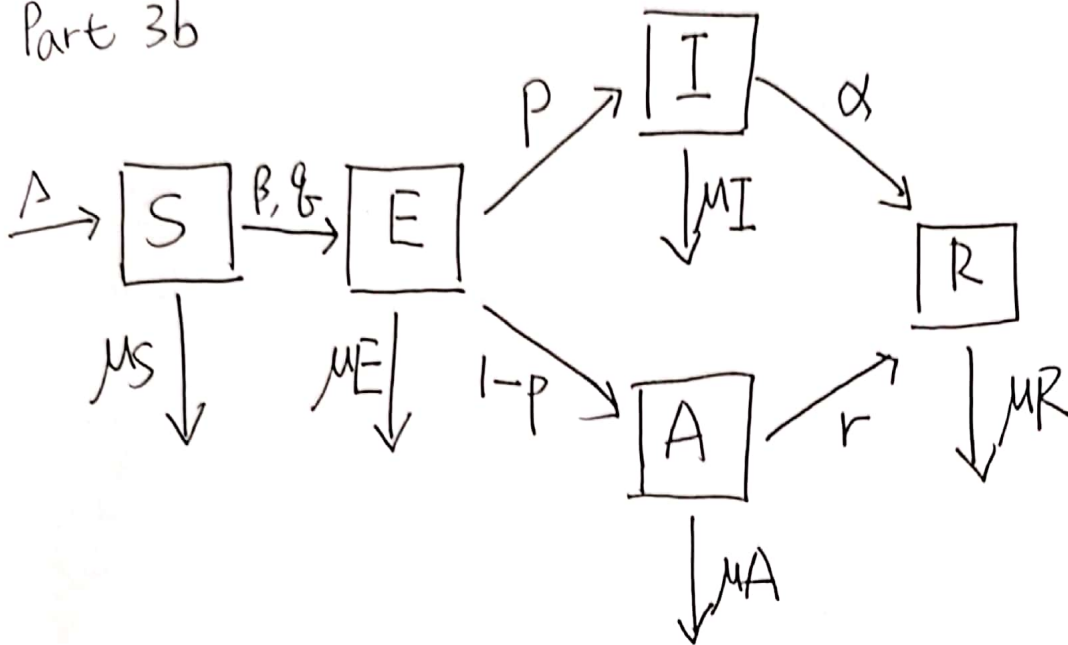


Part 3b

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$$\frac{ds}{dt} = \Lambda - \beta SI - qSA(1-p) - \mu_S$$

$$\frac{dE}{dt} = \beta SI + qSA(1-p) - pE - (1-p)E - \mu_E$$

$$\frac{dI}{dt} = pE - \alpha I - \mu_I$$

$$\frac{dA}{dt} = (1-p)E - rA - \mu_A$$

$$\frac{dR}{dt} = \alpha I + rA - \mu_R$$