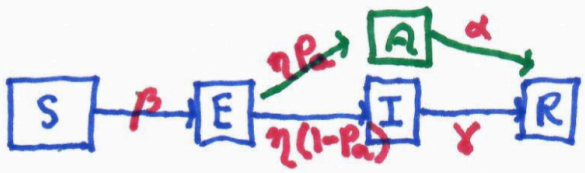
# Homework 3

Due February 27 (Monday)

Add a class of asymptomatic but infectious individuals to the SEIR model




$0 \le P_a \le 1$

Write down the ODE and modify Plague_SEIR.m to graph some trajectories for S(t), E(t), A(t), I(t).

ODE:

$S' = -\beta S(I + A)$ $\quad S = y_1$

$E' = \beta S(I+A) - \eta(P_a)E - \eta(1-P_a)E$ $\quad E = y_2$

$I' = \eta(1-P_a)E - \gamma I$ $\quad I = y_3$

$A' = \eta(P_a)E - \alpha A$ $\quad A = y_4$

$R' = \gamma I + \alpha A$ $\quad R = y_5$