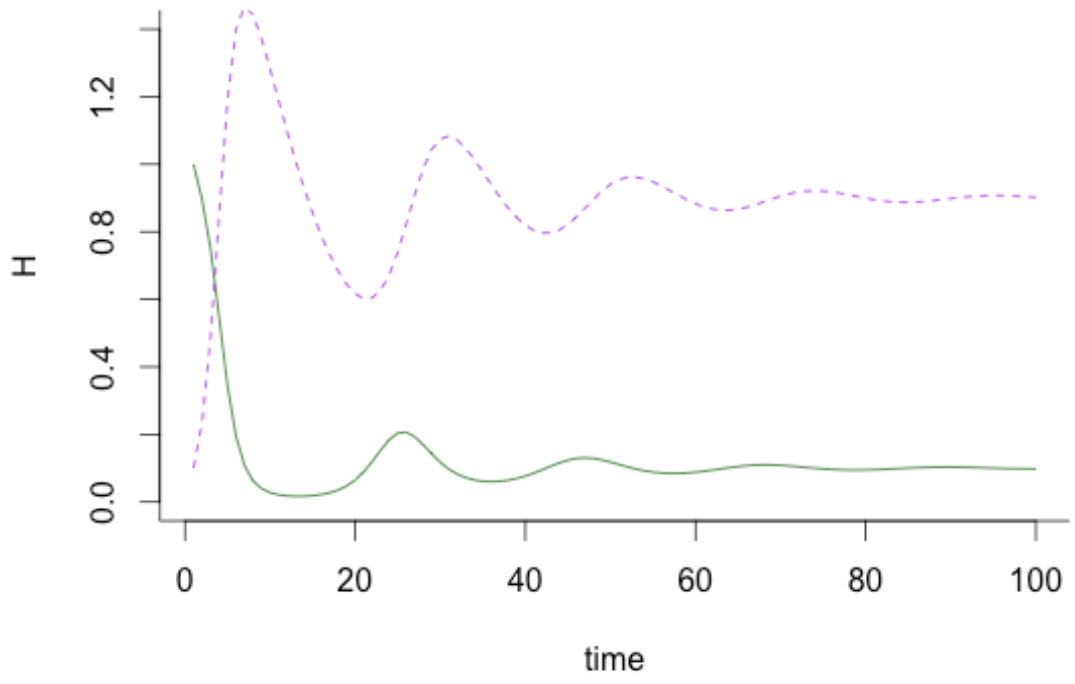
```
zom.prey <- function(t, y, p) {
  H <- y[1]
  Z <- y[2]
  with(as.list(p), {
    dH.dt <- (r * H *(1-H/K)) - (b * H * Z)
    dZ.dt <- (c * H * Z) - (m * Z)
    return(list(c(dH.dt, dZ.dt)))
  })
}

p.Z <- c('r' = 1, 'K' = 1,'b' = 1, 'c' = 1, 'm' = 0.1)
y0 <- c('H' = 1, 'Z' = 0.1)
t <- 1:100

sim.Z <- ode(y = y0, times = t, func = zom.prey, parms = p.Z, method =
'lsoda')
sim.Z <- as.data.frame(sim.Z)

plot(H ~ time, data = sim.Z, type = 'l', col = 'darkgreen', bty = 'l')
points(Z ~ time, data = sim.Z, type = 'l', col = 'purple', lty = 2)
```



With the parasite:

```
zom.par <- function(t, y, p) {
  H <- y[1]
  Z <- y[2]
  P <- y[3]
  with(as.list(p), {
    dH.dt <- (r * H *(1-H/K)) - (b * H * Z)
    dZ.dt <- (c * H * Z) - (m * Z) - (d * Z * P)
    dP.dt <- (e * Z * P) - (n * P)
    return(list(c(dH.dt, dZ.dt,dP.dt)))
  })
}

p.Zp <- c('r' = 1, 'K' = 1,'b' = 1, 'c' = 1, 'm' = 0.1, 'd' = 1, 'e' = 1, 'n'=
0.1)
y0 <- c('H' = 1, 'Z' = 0.1, 'P'= 0.1)
t <- 1:100

sim.Zp <- ode(y = y0, times = t, func = zom.par, parms = p.Zp, method =
'lsoda')
sim.Zp <- as.data.frame(sim.Zp)

plot(H ~ time, data = sim.Zp, type = 'l', col = 'darkgreen', bty = 'l', ylim =
c(0,1.2))
points(Z ~ time, data = sim.Zp, type = 'l', col = 'purple', lty = 2)
points(P ~ time, data = sim.Zp, type = 'l', col = 'red', lty = 2)
```