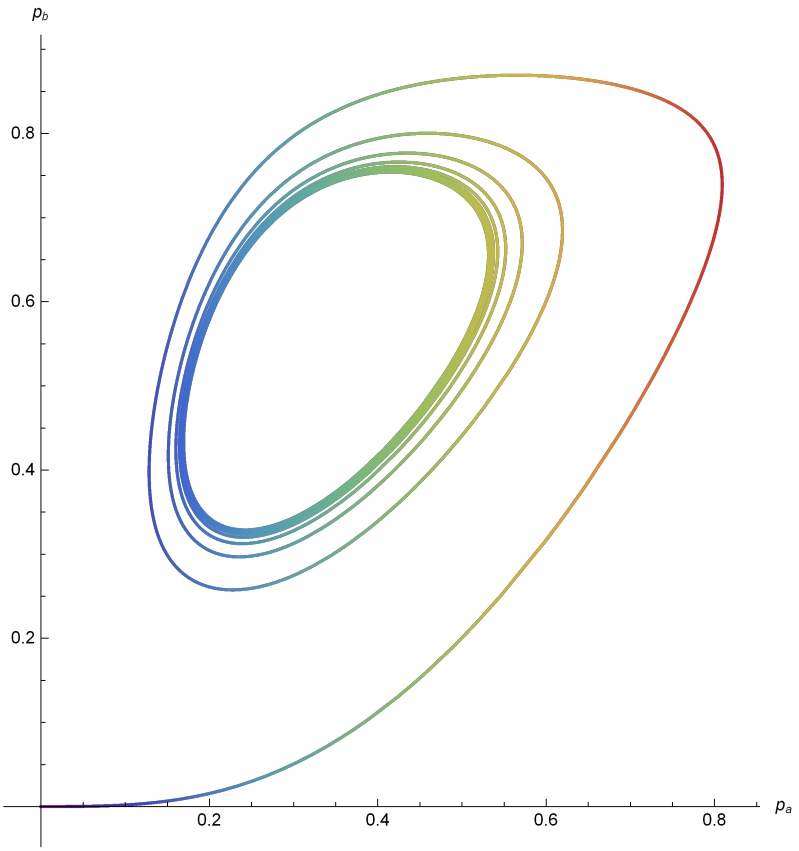
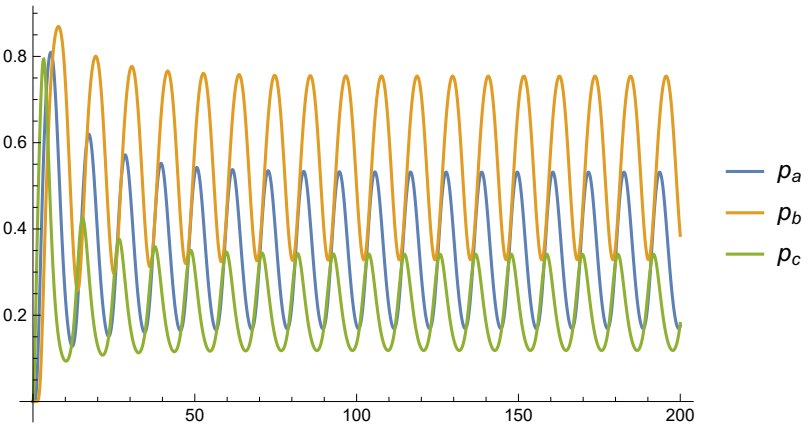
In[•]:=
```
h⁺[p_, θ_, n_] := pⁿ / (pⁿ + θⁿ)
h⁻[p_, θ_, n_] := 1 - h⁺[p, θ, n]

tmax = 200;

With[{ma = 1., mb = 1., mc = 1.,
    na = 2.2, nb = 2.2, nc = 2.2,
    θa = 0.28, θb = 0.28, θc = 0.28,
    ka = 1., kb = 1., kc = 1.,
    γa = 1., γb = 1., γc = 1.,
    δa = 1., δb = 1., δc = 1.},
   sol = NDSolve[{ra'[t] == ma * (h⁺[pc[t], θc, nc]) - γa * ra[t],
                  rb'[t] == mb * (h⁺[pa[t], θa, na]) - γb * rb[t],
                  rc'[t] == mc * (h⁻[pb[t], θb, nb]) - γc * rc[t],
                  pa'[t] == ka * ra[t] - δa * pa[t],
                  pb'[t] == kb * rb[t] - δb * pb[t],
                  pc'[t] == kc * rc[t] - δc * pc[t],
                  ra[0] == 0,
    rb[0] == 0, rc[0] == 0, pa[0] == 0, pb[0] == 0, pc[0] == 0},
                 {ra, rb, rc, pa, pb, pc}, {t, 0, tmax}]];



ParametricPlot[Evaluate[{pa[t], pb[t]} /. First[sol]], {t, 0, tmax},
 AxesLabel → {pa, pb}, ColorFunction → "Rainbow", PlotRange → Full]

Plot[Evaluate[{pa[t], pb[t], pc[t]} /. First[sol]],
 {t, 0, tmax}, PlotLegends → {"pa", "pb", "pc"}]

Animate[ParametricPlot[Evaluate[
   {pa[t], pb[t]} /. First[NDSolve[{ra'[t] == ma * (h⁺[pc[t], θc, nc]) - γa * ra[t],
                  rb'[t] == mb * (h⁺[pa[t], θa, na]) - γb * rb[t],
                  rc'[t] == mc * (h⁻[pb[t], θb, nb]) - γc * rc[t],
                  pa'[t] == ka * ra[t] - δa * pa[t],
                  pb'[t] == kb * rb[t] - δb * pb[t],
                  pc'[t] == kc * rc[t] - δc * pc[t],
                  ra[0] == 0,
    rb[0] == 0, rc[0] == 0, pa[0] == 0, pb[0] == 0, pc[0] == 0},
                 {ra, rb, rc, pa, pb, pc}, {t, 0, tmax}]]], {t, 0, tmax},
  AxesLabel → {pa, pb}, ColorFunction → "Rainbow", PlotRange → Full], {ma, 1., 10.},
 {mb, 1., 10.}, {mc, 1., 10.}, {na, 2., 5.}, {nb, 2., 5.}, {nc, 2., 5.},
 {θa, 0.2, 1.}, {θb, 0.2, 1.}, {θc, 0.2, 1.},
 {ka, 1., 5.}, {kb, 1., 5.}, {kc, 1., 5.},
 {γa, 1., 5.}, {γb, 1., 5.}, {γc, 1., 5.}, {δa, 1., 5.},
 {δb, 1., 5.}, {δc, 1., 5.}, AnimationRunning → False]
```

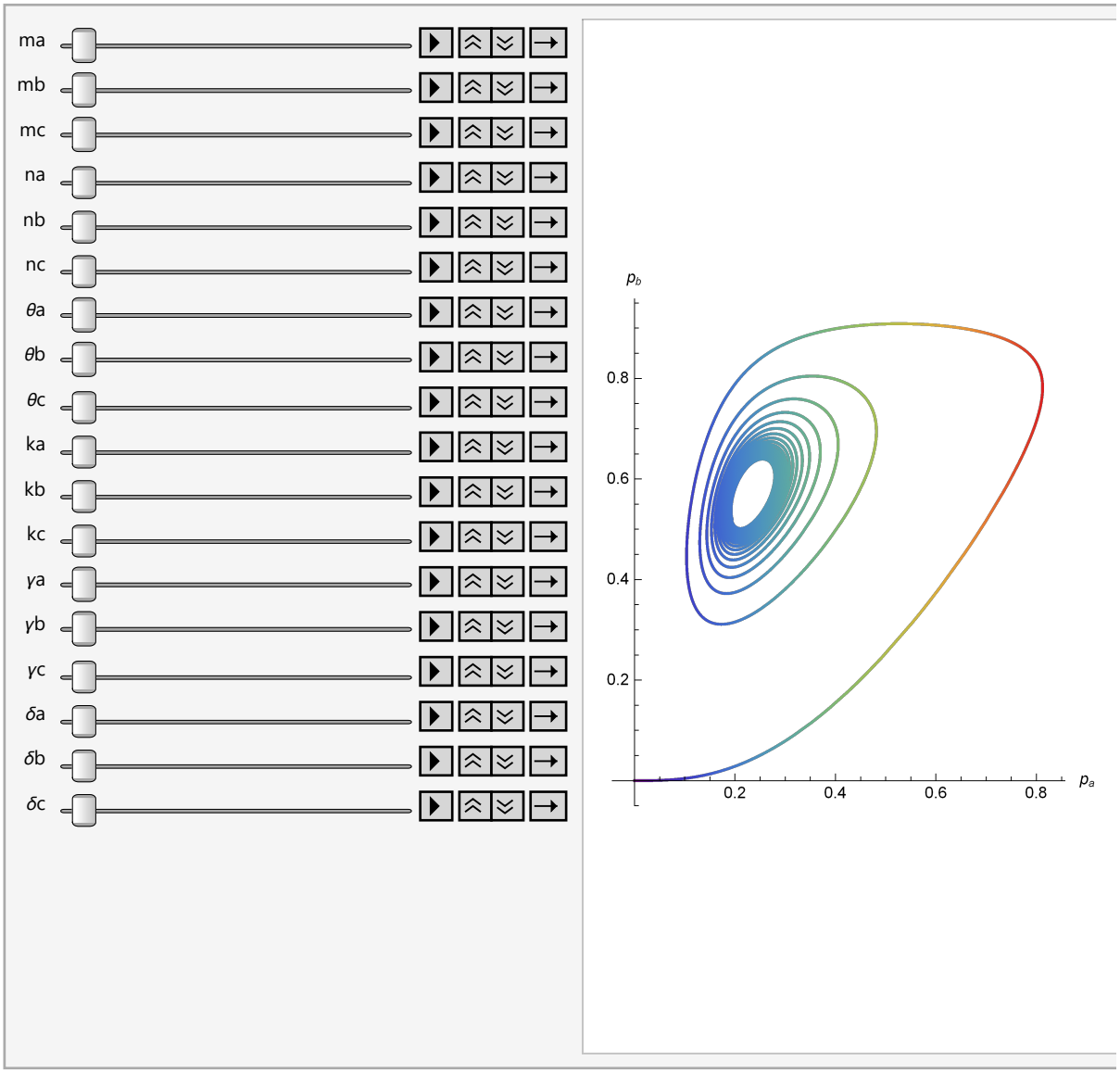
Out[ ]=



Out[ ]=



Out[ ]=


ma
mb
mc
na
nb
nc
θa
θb
θc
ka
kb
kc
γa
γb
γc
δa
δb
δc
p_b
0.8
0.6
0.4
0.2
0.2
0.4
0.6
0.8
p_a