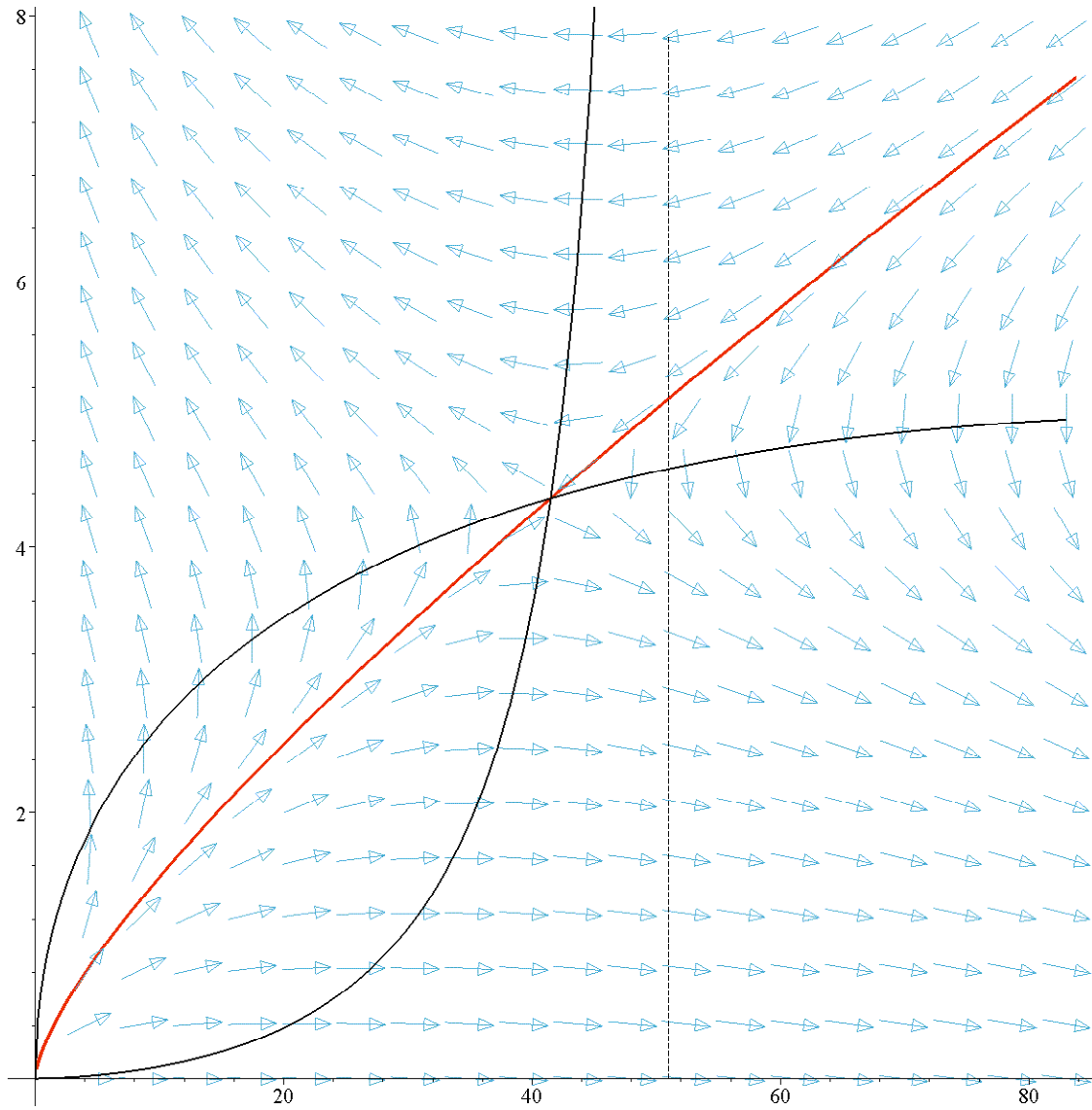


```

[ > restart:
[ #Set Options and Preferences
[ > with (plots) :
[ > axesfonts:=axesfont=[TIMES,ROMAN,8]:
[ > labelfonts:=labelfont=[TIMES,ROMAN,10]:
[ > webblue:=COLOR(RGB,.1,0,.55):
[ > webred:=COLOR(RGB,.9,.1,0):
[ > lightblue:=COLOR(RGB,0.196,0.6,0.8):
[ #Parameter Assignments
[ > A:=1: a:=0.5: d:=0.05: rho:=0.02: p:=0.02:
[ #Function Definitions
[ > f := k-> A*k^(a):
[ > fk := k-> A*a*k^(a-1):
[ > y := k-> f(k)-d*k:
[ > yk := k-> fk(k)-d:
[ #The Dynamic System
[ > kdot := diff(k(t),t) = y(k(t))-c(t):
[ > cdot := diff(c(t),t) = c(t)*(yk(k(t))-rho)-p*(p+rho)*k(t):
[ #Solving for a Stationary State (SS)
[ > eqk := eval(kdot,{k(t)=k,c(t)=c}):
[ > eqc := eval(cdot,{k(t)=k,c(t)=c}):
[ > systemss:=fsolve({eqk,eqc},{k,c},c=0.01..1000):
[ > kss:=subs(systemss,k): kss:
[ > css:=subs(systemss,c): css:
[ > kmin:=0: kmax:=2*kss: cmin:=0: cmax:=1.8*css: The range can be tweaked to change viewing perspective
[ #Simulating the Dynamics
[ > FNS:={k(t),c(t)}:
[ > SYS:={kdot,cdot}:
[ > DETools[dfieldplot](SYS, FNS, t=0..100, scene=[k(t),c(t)], k=kmin..kmax,
[ c=0.2+cmin..cmax-0.2, stepsize=.05, colour=lightblue, arrows=SLIM):
[ #Adding NullClines to the Phase Diagram
[ > nullcline_consumption := plot({y(k)},k=kmin..kmax,color=black,thickness=2):
[ > ka:=solve(yk(k)=rho,k):
[ > asymptote:=plottools[curve]([[ka,0],[ka,cmax]], linestyle=dash):
[ > nullcline_capital :=
[ plot({(p*(p+rho)*k)/(yk(k(t))-rho)},k=kmin..ka,color=black,thickness=2):
[ > nullclines:=nullcline_consumption,nullcline_capital,asymptote:
[ #Plotting the Stable Manifold
[ > INITS:= [[k(0)=0.99999*kss,c(0)=0.99999*css],[k(0)=1.0001*kss,c(0)=1.0001*css]]:
[ > phase:=DEtools[phaseportrait](SYS, FNS, t=-225..0, INITS, scene=[k(t),c(t)],
[ k=kmin..kmax, c=cmin..cmax, stepsize=0.5, colour=lightblue, arrows=slim, linestyle=1,
[ linecolour=webred, thickness=4, axesfonts, labelfonts):
[ display({phase,nullclines}, title=`The stable manifold, the nullclines, and the Phase
[ Diagram of the Blanchard model`);

```

The stable manifold, the nullclines, and the Phase Diagram of the Blanchard model



```

> plotsetup(ps,plotoutput='Blanchard_Phase_color.ps',plotoptions='color,portrait,noborder,
axiswidth=500pt,axisheight=500pt'):
display({phase,nullclines},view=[kmin..kmax,cmin..cmax],labels=['`,``,`'],axesfonts,label
fonts); plotsetup(default):
> plotsetup(ps,plotoutput='Blanchard_Phase.ps',plotoptions='nocolor,portrait,noborder,ax
iswidth=500pt,axisheight=500pt'):
display({phase,nullclines},view=[kmin..kmax,cmin..cmax],labels=['`,``,`'],axesfonts,label
fonts); plotsetup(default):
    
```