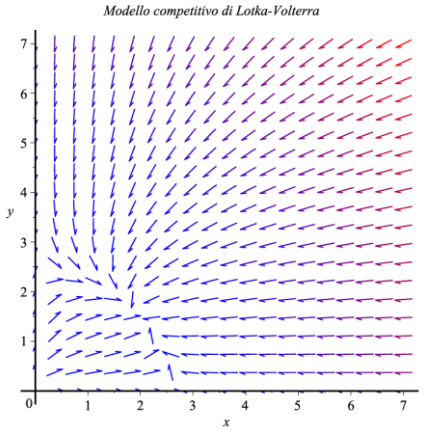
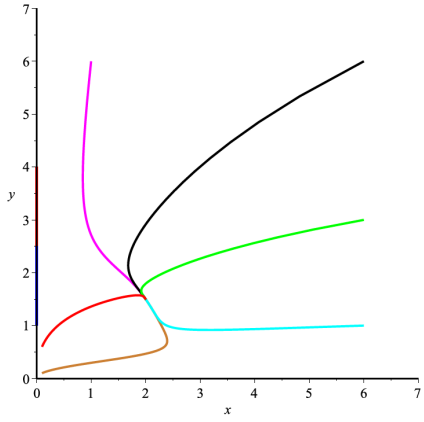
Risolviamo il problema 4. Con i comandi Maple:

```
restart:
with(DEtools):
a:=11: b:=4: c:=2: d:=5: e:=1: f:=2:
LVcomp := diff(x(t), t) = x(t)*(a-b*x(t)-c*y(t)),
          diff(y(t), t) = y(t)*(d-e*x(t)-f*y(t)):
vars := x(t), y(t):
DEplot({LVcomp}, {vars}, t = 0..8, x = 0..7, y = 0..7,
       title = `Modello competitivo di Lotka-Volterra`,
       colour = magnitude);
```




```
DEplot({LVcomp}, {vars}, t = 0..8, x = 0..7, y = 0..7,
       [[x(0)=0.1, y(0)=0.1], [x(0)=0, y(0)=4], [x(0)=1, y(0)=6],
       [x(0)=6, y(0)=1], [x(0)=6, y(0)=6], [x(0)=6, y(0)=3],
       [x(0)=0, y(0)=1], [x(0)=0.1, y(0)=0.6]],
       numpoints = 800, arrows = none, thickness = 2,
       linecolour = [gold, red, magenta, cyan, black, green, blue, red]);
```



(Si noti l'uso di *insiemi* e di *liste* negli argomenti.) Per tracciare grafici parametrici di *x*(t) e *y*(t) con parametro comune t, si può usare anche un altro comando:

```
phaseportrait({LVcomp}, {vars}, t = 0..8, [[x(0)=6, y(0)=6]],
              x = 0..7, y = 0..7, stepsize = 0.01, arrows = none,
              thickness = 2, linecolour = black);
```