

### 2.3.3 Tumor growth

The Gompertz law for the growth of tumor size is

$$\dot{N} = -aN \ln(bN).$$

a) *Interpret  $a$  and  $b$  biologically.*

Here  $a$  is the growth rate whereas  $1/b$  has the role of maximum size, analogous to the carrying capacity in population dynamics. The growth is positive only as long as  $N < 1/b$ .

b) *Sketch the vector field and then graph  $N(t)$  for various initial values.*

