logistic growth (a.k.a. icky bacteria assignment)

james francis toy iv

2010-03-10

1. CODE
2. $$y' = ay + by^2 = ky(C - y) = -by((-\frac{a}{b}) - y)$$
   (a) $C = -\frac{a}{b}$
   (b) the population (or y) approaches infinity
3. CODE
4. $y_0 = 0.02$ what is y after 4 hours?
   (a) t = 4.000 y = 0.2869
5. Euler's method to model the population
   (a) one branches to two branches
   (b) two branches to four branches
   (c) eight branches?
   (d) looks like three branches
   (e) line with an outlier
6. looks parabolic and then branches from two extremes to four extremes – after around 2.5 in the x direction the whole thing gets a bit crazy