Math 2410 Section 3.2 Supplemental

Example 1

A model for some population $P(t)$ is given by the IVP

$$\begin{cases} \frac{dP}{dt} = P(a - bP) \\ P(0) = 10 \end{cases} .$$

Suppose it is known that $P(1) = 100$, and the limiting number of the population is 1000. Solve for $P(t)$.