How to emptying a bath

$Ag := 0.015^2\pi$ The area of the bath pipe

$Ak := 1.45 \cdot .45$ The area of the bath

$k := 0.6 \cdot \sqrt{2 \cdot 9.82} \cdot \frac{Ag \cdot 60}{Ak}$ Calculating a constant, using the Torcellis law, 60 gives the time in minutes

Given

$\frac{d}{dt} h(t) + k\sqrt{h(t)} = 0$ The diff equation, where h(t) describes the high on the water in the bath. I uses the Bernoulli Eqs to set up the equation.

$h(0) = .3$ The initial value of the high of the water in the bath

$h := Odesolve(t, 6, 1000)$ Solves the diff about 6 minutes, in 1000 steps