[mex101] A drop of fluid disappearing

A spherical drop of fluid with mass density ρ, initially of radius r_0, shrinks at a rate that is proportional to its size. Find the radius of the drop as a function of time.
(a) Assume that the mass decreases at a rate proportional to the surface area of the drop as a result of evaporation.
(b) Assume that the mass decreases at a rate proportional to the volume of the drop as a result of some kind of chemical instability.

Solution: