

Economic Dynamics

Homework 1: Due October 13, 2017 11:00am Requirements

Submit your homework *by email to*

"Economic Dynamics" <dynamics-hw@turnbull.sk.tsukuba.ac.jp>

The **Subject:** should be FH25051 Homework #1 (in hankaku romaji). Use this class number, even if you are registered according to a different code. Your email must contain your *name* and *student ID number*.

Problems

In class we discussed the case of an object in free fall, described by the equation $\ddot{h}(t) = g$, where t is time in seconds and h is the height above the ground. In all of the problems below, use $g = -9.80 \text{ m/sec}^2$ (m is meters and sec is seconds).

1. Give the specific solution for the “typical exam problem,” where the object is dropped (*i.e.*, starts at rest, or velocity zero) from a height of 1000 m.
2. Give the specific solution assuming the object is shot straight up from a cannon on the ground (height 0) at time 0 with velocity 100 m/sec.
3. Give the specific solution assuming the object is a rocket fired straight up that runs out of fuel after 30 seconds at a height of 1000 m with a velocity of 100 m/sec.

You only need to give information about solutions starting from the initial condition given until the time the object hits the ground.