We first set up the same set of basic assumptions and variables.

```
GRAV <- 9.8 # gravity (m/s^2)
MASS <- 1 # mass (kg)
I_ROT <- 1 # roational inertia (kg m^2)
L1 <- 0.5 # distance from rotation point to CoM (m)
L2 <- 1 # distance from rotation ponit to tension (m)
PHI <- 0.1 # angle of Ft relative to floor (rad)
FT <- 11 # tension force (N)
OMEGA <- 0.1 # angle of floor relative to gravity (rad) (because shifted axis)
```

Additionally, we set the time interval and seed values for time and theta (distance from flat):

```
dt <- 0.05
t_max <- 5

theta <- 0
time <- 0
```