```
\begin{verbatim}

------------------------------------------------------------------------------
pro rk_inte1,elem,t1,t2,dt,output=output,plot=plot
------------------------------------------------------------------------------
Cartesian integration of non-perturbed 2-body orbit HS 20.11.02/12.02.06
  elem=[a,e,i,ome,w,tau]  initial orbital elements
  t1,t2                   integration time interval (in orbital periods)
  dt                      time step (in orbital periods)
KEYWORDS:
------------------------------------------------------------------------------
  myy                     G * (m1+m2)   def=1.
  taylor=choice           use Taylor series, with degree=taylor (def=rk4)
                          choices=  1, 2              explicitly written
                                  -1,-2,-3,-4,-5,-6   using f,g-series
------------------------------------------------------------------------------
PLOTTING KEYWORDS:
  plot=istep              plot every istep steps (def=no plot)
  oplot=color             plot on top of previous orbit with
                          color=oplot+2 (i.e 1->col=3=green)
  /connect                -> connect orbit points in the plot (def=no)
  wid                     limit of the plot region (DEF=1.25 a)
  /cplot                  plot analytic solution (white squares)
  title                   -> plot title
  output=val              output interval of ELEM,L,E in steps (def=nsteps/10)
                          val=negative -> just store
------------------------------------------------------------------------------
OUTPUT/STORE KEYWORDS:
  t_out,l_out,e_out       dL/L and dE/E vs t_out (stored every |output| step)
  x_out,y_out,z_out       positions
  vx_out,vy_out,vz_out    velocities
  dl,de                   return averaged change in dL/L and dE/E
                                                  /orbit period
  /silent                 -> do not print anything to terminal
------------------------------------------------------------------------------
EXAMPLE INPUT VALUES:
  /example                example of integration:
                          a=1,ecc=0.5,i=10,ome=90.,w=0,tau=0
                                t1=0, t2=10*TORB, dt=0.01*TORB
  rk_inte1,elem,t1,t2,dt,/example,/plot
------------------------------------------------------------------------------

\end{verbatim}
```

EXAMPLES OF USING RK_INTE1

- rk_inte1.pro:
  rk4-integration (or Taylor-series) of 2-body orbit
  for given orbital elements and time interval
  checks the conservation of orbital elements
  -"- angular momentum L

```
                -"-          energy E
  plots the orbit + analytial solution
- prints the following instruction when called without parameters:
  IDL> rk_inte1
```