```
      program GravUnitsShort ! BB May 20, Nov 10 2017.
c Gravitational units G=c=1.
      implicit real*8 (a-h,o-z)
      logical ltest
      parameter(c=2.998d+08) ! 2.998d+08 [m/s] = 1 -> c.
      parameter(G=6.674d-11) ! 6.674d-11 [m^3 kg^{-1} s^{-2}] = 1 -> G.
      parameter(y=365.d00*24.d00*3600.d0) ! Year in [s].
      parameter(iuo=6,xly=y*c)             ! Light year in [m].
      parameter(em=5.972d24,r=6371.d03)    ! Earth mass [kg], radius [m].
      ltest=.false.
      if(ltest) stop "GravUnits: ltest."
      ltest=.true.
      write(iuo,'(/," Program GravUnitsShort.f:")')
      write(iuo,'(/," Schwarzschild radius and gravitational units")')
      write(iuo,'(/," c  [m/s]",10x,"=",g11.4,4x,"speed of light")') c
      write(iuo,'(" G  [m^3/(kg*s^2)] =",g11.4,
     &       4x,"gravitational constant")') G
      write(iuo,'(" y  [s]            =",g11.4,4x,"year")') y
      write(iuo,'(" ly [m]",12x,"=",g11.4,4x,"light year xly")') xly
      write(iuo,'(" em [kg]           =",g11.4,4x,"earth mass")') em
      write(iuo,'(" r  [m]            =",g11.4,4x,"earth radius")') r
      xg=G*em/r**2
      write(iuo,'(" g  [m/s^2]",8x,"=",f7.4,1x,
     &   "= G*em/r^2 earth surface grav acceleration")') xg
      sr=2*G*em/c**2
      write(iuo,'(/,
     &   "(a) Earth Schwarzschild radius sr=2*G*m/c^2 [m] =",1g12.4)') sr
      sror=sr/r
      write(iuo,'(4x,"Ratio sr/r [dimensionless] =",17x,g12.4)') sror
c
c Everything in seconds:
      write(iuo,'(/,"(b) G=c=1 and everything in seconds [s]:",/)')
      s=1.d00 ! one second = 1
      xm=s/c  ! meter
      ear=(r*xm)    ! Earth radius conversion from  [m] to [s].
      write(iuo,'(" Earth radius [s]",20x,"=",1g12.4)') ear
      xkg=G*xm**3/s**2
      eam=(em*xkg) ! Earth mass   conversion from [kg] to [s].
      write(iuo,'(" Earth mass   [s]",20x,"=",1g12.4)') eam
      sror=2*eam/ear
      write(iuo,'(" Ratio 2*em/r = sr/r [dimensionless] =",g12.4)') sror
c
c Everything in years:
      write(iuo,'(/,"(c) G=c=1 and everything in years [y]:",/)')
      xm=xm/y
      xkg=xkg/y
      xg=xg*y ! agrees with xg=em*xkg/(r*xm)**2
      cg=xg*c/y ! To convert from [1/y] to [1/s] and then to [m/s^2].
      eam=(em*xkg)
      ear=(r*xm)
      xmor=2*eam/ear
      write(iuo,'(" Earth radius [y]",20x,"=",1g12.4)') ear
      write(iuo,'(" Earth mass   [y]",20x,"=",1g12.4)') eam
      write(iuo,'(" Ratio 2*em/r = sr/r [dimensionless] =",g12.4)') sror
c
c Everything in meter:
      write(iuo,'(/,"(d) G=c=1 and everything in meters [m]:",/)')
      xm=1.d00
      s=xm*c
      xkg=G*xm**3/s**2
      xg=em*xkg/(r*xm)**2
      cg=xg*c**2 ! To convert from [1/m] to [m/s^2].
      write(iuo,'(" g [m/s^2] check",4x,"=",g11.4)') cg
      eam=(em*xkg)
      ear=(r*xm)
      xmor=2*eam/ear
      write(iuo,'(" Earth radius [m]",20x,"=",1g12.4)') ear
      write(iuo,'(" Earth mass   [m]",20x,"=",1g12.4)') eam
      write(iuo,'(" Ratio 2*em/r = sr/r [dimensionless] =",g12.4)') sror
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c
c Everything in light years:
      write(iuo,'(/,"(e) G=c=1 and everything in light years [ly]:")')
      write(iuo,'(/," The same as everything in years, because")')
      write(iuo,'("      ly = c*y and we use c = 1 units.",/)')
c
      stop "GravUnits: all done."
      end
```