Modelando objetos autogravitantes

```
> restart:with(plots):
```

A partir de una ecuación de estado politrópica, encuetro la función densidad

```
> rho:= exp((ln((P(r))/(K)))/(gamma1));
```

$$\rho := e^{\dfrac{\ln\left(\dfrac{P(r)}{K}\right)}{\gamma 1}} \tag{1}$$

Las ecuaciones de estructura para el caso newtoniana isótropo serán

```
> Ecuac1 := diff(P(r),r) + m(r)*rho/r^2=0;
```

$$Ecuac1 := \frac{d}{dr}P(r) + \frac{m(r)\, e^{\dfrac{\ln\left(\dfrac{P(r)}{K}\right)}{\gamma 1}}}{r^2} = 0 \tag{2}$$

```
> Ecuac2 := diff(m(r),r) = 4*Pi*r^2*rho;
```

$$Ecuac2 := \frac{d}{dr}m(r) = 4\,\pi\, r^2\, e^{\dfrac{\ln\left(\dfrac{P(r)}{K}\right)}{\gamma 1}} \tag{3}$$

Defino los parámetros de mi ecuación de estado

```
> K := 1.5; gamma1 := 4/3;
```

$$K := 1.5$$

$$\gamma 1 := \frac{4}{3} \tag{4}$$

y los parámetros de ejecución

```
> r0 := 10^(-4); ifinal:= 100; infinito := 10^(20):
```

$$r0 := \frac{1}{10000}$$

$$ifinal := 100 \tag{5}$$

Se plantea la integración del sistema de ecuaciones de estructura y se varía la condición inicial para la presión central.

```
> for i from 1 to ifinal do
  # se define el sistema de acuaciones
  SistemaPm := {Ecuac1 , Ecuac2, P(r0)= 1+5*i, m(r0)=0.}:
  funcionesPm := {P(r),m(r)}:
  #Se integra el sistema de ecuaciones para condiciones iniciales
  variable en la presión
  solucion:= dsolve(SistemaPm,funcionesPm,numeric,events=[[P(r)=10^
  (-18),halt]],output=listprocedure):
  # se almancena los valores resultados de la integración
  radio := rhs(solucion[1]):presion := rhs(solucion[2]):masa := rhs
  (solucion[3]):
  # se captura el último valor de la masa, generando una queja del
  sistema que desantendemos
  masaTotal[i]:=masa(infinito):RadioExt[i]:=radio(infinito): Pnula[i]
  :=presion(infinito):
  # a partir del valor de la presión central se calcula el densidad
  central
  rho0[i]:= evalf(subs(P(r)=presion(r0),rho));
  end do:
```

Warning, cannot evaluate the solution further right of 3.3678774, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 3.3678774, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 3.3678774, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 2.8942597, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 2.8942597, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 2.8942597, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 2.6337507, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 2.6337507, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 2.6337507, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 2.4618108, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 2.4618108, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 2.4618108, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 2.3335356, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 2.3335356, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 2.3335356, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 2.2342417, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 2.2342417, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 2.2342417, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 2.1519435, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 2.1519435, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 2.1519435, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 2.0836903, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 2.0836903, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 2.0836903, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 2.0241289, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 2.0241289, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 2.0241289, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 1.9729681, event #1 triggered a halt

Warning, cannot evaluate the solution further right of 1.9729681,

event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.9729681,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.9270065,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.9270065,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.9270065,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.8865517,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.8865517,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.8865517,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.8499130,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.8499130,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.8499130,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.8160381,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.8160381,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.8160381,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.7856032,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.7856032,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.7856032,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.7575742,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.7575742,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.7575742,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.7308341,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.7308341,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.7308341,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.7068876,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.7068876,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.7068876,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.6843103,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.6843103,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.6843103,
event #1 triggered a halt

Warning, cannot evaluate the solution further right of 1.6632167, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.6632167, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.6632167, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.6433118, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.6433118, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.6433118, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.6240326, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.6240326, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.6240326, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.6064429, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.6064429, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.6064429, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.5895456, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.5895456, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.5895456, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.5737473, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.5737473, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.5737473, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.5585907, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.5585907, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.5585907, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.5434225, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.5434225, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.5434225, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.5297990, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.5297990, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.5297990, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.5166705, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.5166705,

event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.5166705,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.5040688,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.5040688,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.5040688,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4918763,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4918763,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4918763,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4801934,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4801934,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4801934,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4690053,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4690053,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4690053,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4578566,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4578566,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4578566,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4472549,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4472549,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4472549,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4372931,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4372931,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4372931,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4276225,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4276225,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4276225,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4182628,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4182628,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4182628,
event #1 triggered a halt

Warning, cannot evaluate the solution further right of 1.4091877,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4091877,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4091877,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4003407,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4003407,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.4003407,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3917808,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3917808,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3917808,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3835137,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3835137,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3835137,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3754337,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3754337,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3754337,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3671553,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3671553,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3671553,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3596539,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3596539,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3596539,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3523166,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3523166,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3523166,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3451626,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3451626,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3451626,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3381826,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3381826,

event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3381826,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3313725,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3313725,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3313725,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3246184,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3246184,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3246184,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3181573,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3181573,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3181573,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3118441,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3118441,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3118441,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3056852,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3056852,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.3056852,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2996521,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2996521,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2996521,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2934371,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2934371,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2934371,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2875341,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2875341,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2875341,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2819452,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2819452,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2819452,
event #1 triggered a halt

Warning, cannot evaluate the solution further right of 1.2764510, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2764510, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2764510, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2710912, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2710912, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2710912, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2658213, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2658213, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2658213, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2606483, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2606483, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2606483, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2555853, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2555853, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2555853, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2506036, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2506036, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2506036, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2456507, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2456507, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2456507, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2408916, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2408916, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2408916, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2362054, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2362054, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2362054, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2316150, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2316150,

event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2316150,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2271018,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2271018,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2271018,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2226549,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2226549,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2226549,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2180027,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2180027,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2180027,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2136110,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2136110,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2136110,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2094471,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2094471,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2094471,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2053389,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2053389,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2053389,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2013017,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2013017,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.2013017,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1973204,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1973204,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1973204,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1934057,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1934057,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1934057,
event #1 triggered a halt

Warning, cannot evaluate the solution further right of 1.1895388, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1895388, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1895388, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1857478, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1857478, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1857478, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1820065, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1820065, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1820065, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1783262, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1783262, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1783262, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1746106, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1746106, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1746106, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1710502, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1710502, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1710502, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1675382, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1675382, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1675382, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1640844, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1640844, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1640844, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1606758, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1606758, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1606758, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1573100, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1573100,

event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1573100,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1539960,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1539960,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1539960,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1507173,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1507173,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1507173,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1472274,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1472274,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1472274,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1439421,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1439421,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1439421,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1408387,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1408387,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1408387,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1377689,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1377689,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1377689,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1347378,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1347378,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1347378,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1317418,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1317418,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1317418,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1287749,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1287749,
event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1287749,
event #1 triggered a halt

Warning, cannot evaluate the solution further right of 1.1258600, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1258600, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1258600, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1229751, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1229751, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1229751, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1201146, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1201146, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1201146, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1173053, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1173053, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1173053, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1145215, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1145215, event #1 triggered a halt
Warning, cannot evaluate the solution further right of 1.1145215, event #1 triggered a halt

Grafico los valores para puntos rhoCentral, masa total

```
> puntosMasarho0:= {seq([rho0[i],masaTotal[i]],i=1..ifinal)}:
> pointplot(puntosMasarho0);
```
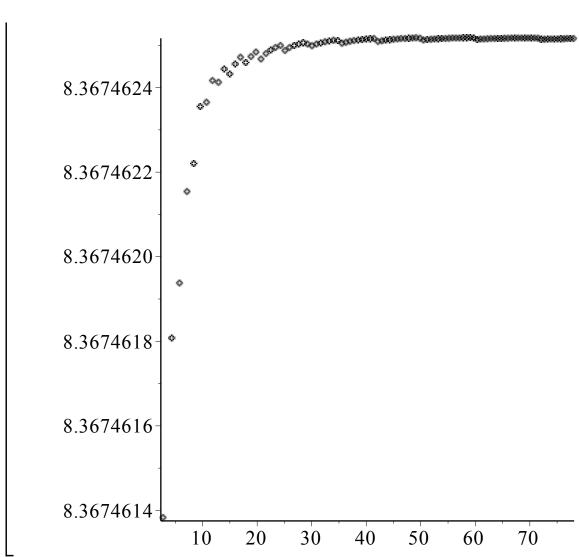
Grafico los puntos Radio exterior, masa total

```
> puntosMasaRadio:= {seq([RadioExt[i],masaTotal[i]],i=1..ifinal)}:
> pointplot(puntosMasaRadio);
```