

```
(%i1) kill(all);
(%o0) done

(%i1) E2: 4*f(r)-r*diff(f(r), r) = 3*r^2*Delta_phi;
(%o1) 4 f(r)-r  $\left(\frac{d}{d r} f(r)\right) = 3 \text{Delta\_phi } r^2$ 

(%i2) ode2(E2, f(r), r);
(%o2)  $f(r) = \left(\frac{3 \text{Delta\_phi}}{2 r^2} + \%c\right) r^4$ 

(%i3) expand(%);
(%o3)  $f(r) = \%c r^4 + \frac{3 \text{Delta\_phi } r^2}{2}$ 
```

□ **1 Eqs. (11-13)**

```
(%i4) c: 2.99792458e8;
(%o4) 2.99792458 108

v (gravitational)

(%i5) v: 18450.97189295086;
(%o5) 18450.97189295086

(%i6) drdroverr2: 3/2*pi*v^2/c^2, numer;
(%o6) 1.785 10-8

v (de Sitter)

(%i7) v: 12520.91438117214;
(%o7) 12520.91438117214

(%i8) drdroverr2: 3/2*pi*v^2/c^2, numer;
(%o8) 8.220000000000005 10-9

v (Lense-Thirring)

(%i9) v: 964.2451143848896;
(%o9) 964.2451143848896

(%i10) drdroverr2: 3/2*pi*v^2/c^2, numer;
(%o10) 4.875 10-11
```