Today's position of Alpha Centauri. Imprecise, one-to-two digit precision at best.
From http://vizier.u-strasbg.fr/viz-bin/VizieR-3?-source=V/137D/XHIP&-out.add=_r
Click on the x,y,z and u,v,w buttons then type Alpha Centauri <return> under Target Name at the top of the form.

```
positionToday = {1, -0.9, 0}; (* In parsecs *)
```

```
velocityToday = {-29.3, 0.3, 12.6}; (* in km/s *)
```

Write a method to take xyz coordinates and print Spherical coordinates. Since the above coordinates are basically galactic x,y,z parsecs, we'll get a radius in parsecs, and galactic coordinates.

```
galCoord[pos_] := Module[{rθϕ}, rθϕ = ToSphericalCoordinates[pos] ;
  Print["Distance = " , rθϕ[[1]], " pc, Galactic Longitude = ", Mod[rθϕ[[3]] /
      Degree + 360, 360], "°, Galactic Latitude = ", 90 - rθϕ[[2]] / Degree, "°"]]
```

```
galCoord[posToday]
```

Distance = 1.34536 pc, Galactic Longitude = 318.013°, Galactic Latitude = 0.°

The above is close enough. Galactic coordinates are specified as R=1.35, Glon=315.741°,Glat=-0.684°.

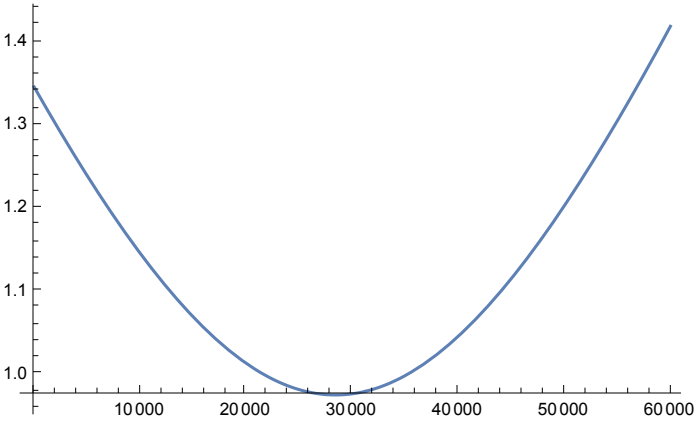
Write a method to calculate future position.

```
future[x_] := positionToday +
  velocityToday (x 365.25 × 86 400.0 / QuantityMagnitude["Parsec", "kiloMeters"])
```

Sanity check. Make sure plotting distance roughly matches graph in
https://en.wikipedia.org/wiki/Alpha_Centauri#/media/File:Near-stars-past-future-en.svg
It does:

In[109]:=
```
Plot[Sqrt[Total[future[x]^2]], {x, 0, 60 000}]
```

Out[109]=




```
future[40 000]
```

{–0.198619, –0.887727, 0.515447}

```
galCoord[future[40 000]]
```

Distance = 1.04556 pc, Galactic Longitude = 257.388°, Galactic Latitude = 29.5371°

That looks like it will be off in Hydra in AD 42018.