Homework 1

Use provided data on circular velocity profile of a spiral galaxy.

- Find mass (in units of solar mass) inside 1,10, and 20 kpc distance from the center of the galaxy
- Find orbital period (in yrs) for stars at 1,10, and 20 kpc distance from the center of the galaxy
- Use maximum disk model for stellar mass to find the distribution of dark matter in the galaxy. The stellar disk in the galaxy has exponential scale-length 3 kpc. Make a plot showing contributions of the stellar disk and separately contribution of the dark matter to the circular velocity at different distances.