

Homework 3 Due March 11

1) problem 2.8 (10 pts)- clarification to the problem, the surface brightness as seen by an external observer located far from the disk perpendicular to the suns position (e.g. ignore galactic reddening).

2) problem 2.13 (20 total pts). The problem states a uniform sphere of stars, it means to say a constant density sphere of stars. Eq 2.5 gives the IMF as power law in M with no stars less massive than $0.2M_{\odot}$. There are many sections to this problem- the last section (it says 'for advanced students', is for extra credit +5 pts)

3) problem 2.20 (15 pts)

4) problem 3.13- (10pts)

5) problem 3.2 (15 pts)

6) What are the observational and theoretical difficulties in determining the IMF and how does one go about trying to resolve them- so talk about things like converting light to mass (and the uncertainties), the effects of age and distance etc etc (15 pts)

7) A dusty question: why does a fair fraction of a galaxies luminosity appear in the IR ? What is the source of energy and the source of IR photons. What does this tell us about star formation? Extra credit: why is observing in the far IR exciting/important for galaxy evolution studies? 15 pts