1) A B3V star has a mass of approximately 10 M\(\odot\). Estimate its luminosity in solar luminosities L\(\odot\), using the approximate mass-luminosity relationship discussed in class: L\(\propto\)M\(^3\). Then use Fig.25-7 to get an estimate for the luminosity using absolute magnitudes. Compare.

2) Using the Mass-Radius relationship discussed in class R \(\propto\) M, estimate the radii of a 5 M\(\odot\) and of a 0.5 M\(\odot\) star. Which is densest on average? In other words, if I take a cubic inch of material from the center of each star, which is likely to contain more mass? HINT: average density = mass/volume.

3) A cepheid of period 50 days is observed by the Hubble Space Telescope to oscillate around an apparent magnitude of 24 in a distant spiral galaxy. How far is that galaxy approximately? HINT: use Fig. 25-11.