Write your name and EID on every page of your homework. If your homework runs to more
than one page, please staple the pages together.

1. About 5% of all meteorites are made of nearly pure iron and nickel. What is the likely
origin of these meteorites?

2. The nearest star is about 4 light years away.
   (a) How far away is the star in kilometers?
   (b) Suppose you travel to the nearest star in a rocket ship moving at 100 km per hour
       (100 km/hr is about 62 mi/hr, a typical automobile speed on a Texas highway).
       How many years will it take you to get to the star?
   (c) Suppose you travel to the star at 10 km per \textit{second} (the speed of a rocket in
       orbit around the Earth). How many years will it take you to get to the star?

3. Suppose two stars are identical in every respect but one is 9 times brighter than the
   other. How much further away is the fainter star than the brighter star?

4. An electromagnetic wave traveling through space has a frequency of \(5.0 \times 10^{17}\) Hz.
   What is the wavelength of the radiation in centimeters? In Ångstroms? What is
   the name given to radiation with this wavelength? Where would you have to put a
   telescope to observe radiation with this wavelength from a star?