**Seminar sheet 1**

1. Distance form sun to Neptune = 4.476x109km

4.476x109km/3.06x1013 = 1.46x10-4 pc

Distance from the sun to Proxima Centauri = 4.243 light years

4.243/3.262 = 1.3pc

1.3pc/0.000145pc = 8965.52 times further away than Neptune.

1. d = 2x106 AU from the Sun
   1. 2x106/206265 = 9.7pc
   2. Parallax angle: π’’= 1/d(pc)
2. Sirius has a parallax of 0.379 arcsec. What is the distance in parsec and light years?

2.639pc x 3.262 = 8.608 lightyears

1. Kepler’s laws of motion
   1. All planets move about the sun in elliptical orbits, having the Sun as one of the foci.
   2. A radius vector joining any planet to the sun sweeps out equal areas in equal lengths of time.
   3. The squares of the sidereal periods of the planets are directly proportional to the cubes of their mean distances from the sun i.e., P2 = a3