The quiz will only have questions on material that has been covered in class. This homework also includes some review questions.

1. **Star A and Star B have the same luminosity, and Star A has twice the trigonometric parallax angle of Star B.** (Assume no dust toward either star)

   a) What are their relative distances

   b) what are their relative brightnesses?

2. **What two quantities are plotted in a H-R diagram?**

   ___stellar apparent brightness vs. stellar distance

   ___stellar luminosity vs. stellar surface temperature

   ___stellar apparent brightness vs. stellar surface temperature

   ___none of these

3. **What is the distance to a star whose trigonometric parallax is 2 arcsec?**

   ___0.2 parsec

   ___1/2 parsec

   ___2 parsec

   ___it depends on the luminosity of the star

4. **Let's think about two stars. Star C has a surface temperature of 2000K, Star D has a surface temperature of 6000K.**

   a) Compare the energy generated per unit surface area for these two stars.

   b) If Star A is the same luminosity as star B, compare the relative sizes (either surface area or radius, but specify which) of the two stars.

5. **For main-sequence stars in the Hertzsprung-Russell Diagram:**

   a) Compare the luminosities of Star E and Star F if Star E has a lower surface temperature and twice the distance of Star F.

   b) Compare the masses of Star E and Star F from part (a).

6. **What is the most important stellar properity that determines the strength of the Hydrogen absorption lines?**

___The surface temperature of the star

___The chemical composition of the star

___The amount of interstellar reddening in the direction of the star

___The size of the telescope used to observe the star

7. **A star's parallax motion is due to:**

___the star's motion through space

___the Earth's rotation about it's axis

___the Sun's motion through the sky during the day

___the Earth's motion around the Sun

8. **Star A and Star B have *identical* spectral types but A is much redder than B.** Which of the following statements regarding these stars are true, which are false?

___Star A has a lower surface temperature than Star B.

___Star A is a red giant and Star B a main-sequence star

___There must be more dust in the direction of Star B than towards Star A

___Star A is more luminous than star B

9. **Consider two *main-sequence* stars. Star A has twice the surface temperature of Star B. Which of the following are true and which are false for these two stars? (assume no dust toward either star).**

___Star A must be massive than star B

___Star A must be more luminous than Star B

___Star A must have bluer colors than Star B

___If its apparent brightness is fainter, Star A must be more distance than Star B

10. **The nearest stars other than the Sun are about how far away?**

11. **Star A and Star B have identical spectra. If Star A is brighter than Star B, which of the following are true, which are false?**

___Star A is more luminous than Star B

___Star A and Star B have the same temperature

___Star B is more distant than Star A

___Star A must be a red giant

12. **For a 2900K object, at what wavelength is the peak of the Planck radiation curve?**

14. **Review. Suppose the moon is at your zenith at Sunrise on the first of the month. What is the phase of the moon? At what time will the moon be at your zenith in 7 days and what phase will it be? 14 days? 21 days?** Draw a picture of the relative positions of the Moon, Sun and Earth that demonstrate your answer.

15. **Review. Rank the following in order of increasing wavelength (1 - shortest; 5 - longest):**

    ___X-rays

    ___FM radio (800 MegaHertz)

    ___Blue light

    ___AM radio (800 kiloHertz)

    ___Infrared

16. **Review. What is the wavelength of a 100 kilohertz (10^5 cycles/second) "AM 100") radio signal? (possibly useful number: $c = 300,000$ km/sec)**