The Properties of Stars.

1. Atoms of different elements have a unique spectral signature of emission lines because each element
   a) has a unique number of neutrons
   b) has a unique set of photons
   c) has a different temperature
   d) has a unique set of electron orbits

2. A star emits light like a blackbody. If a star doubles its temperature, what happens to the wavelength at which it emits most of its energy?
   a) it doubles
   b) it halves
   c) it stays the same
   d) it quadruples

3. A star is moving away from the Earth at 200 km/s. The Hα Balmer line (which occurs at rest at 656.3 nm) would be observed at
   a) less than 656.3 nm
   b) more than 656.3 nm
   c) 656.3 nm (i.e. its rest wavelength)
   d) there is insufficient information to know

4. A star's absolute magnitude depends on only
   a) distance and diameter
   b) temperature and distance
   c) distance
   d) temperature and diameter

5. The most important feature of binary systems is that they enable us to determine stellar
   a) temperatures
   b) masses
   c) chemical compositions
   d) pressures

6. If 2 stars are at the same distance and have the same radius, but one is twice as hot as the other, the hotter star is
   a) 4 times brighter than the cooler star
   b) 4 times fainter than the cooler star
   c) 16 times brighter than the cooler star
   d) 16 times fainter than the cooler star