

Name:

### **Astronomy 3 - Problem Set 1**

1. If sunlight takes 8 minutes to reach Earth, how long does moonlight take?
2. As seen from your latitude, what is the angle between the north celestial pole and the northern horizon? Between the southern horizon and the noon sun at the summer solstice?
3. About how many days must elapse between the first quarter moon and the third quarter moon?
4. If a planet has an average distance from the sun of 4 AU, what is its orbital period?
5. Compare the force of gravity on the surface of the moon with the force of gravity at Earth's surface.
6. From what locations on Earth is the north celestial pole not visible? The southern celestial pole? The celestial equator?
7. How do the seasons in Earth's southern hemisphere differ from those in the northern hemisphere?
8. Suppose you lived on the Moon, near the center of the face that we see from the Earth. a) During the phase of full moon, what phase could you see for Earth? Would it be daylight or dark where you live? b) On Earth, we see the Moon rise and set each day. If you lived on the Moon, would you see Earth rise and set? Why or why not? c) What would you see when people on Earth were experiencing either a solar or a lunar eclipse?