AST101 Takehome Quiz #11

Name_____

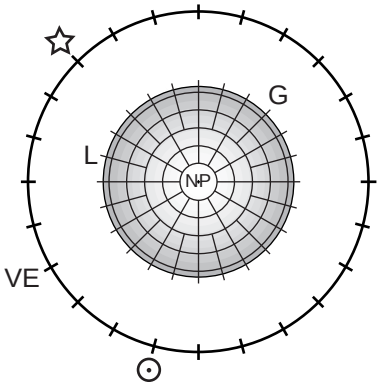
For full credit, be sure to include proper units, as well as E, W, a.m., p.m. when appropriate with your answers.

G = Greenwich
VE = vernal equinox
⊙ = sun (mean)
☆ = star
L = local position (you)

1. Using the diagram at right, what is the Local Sidereal Time (sidereal time at the local position)?

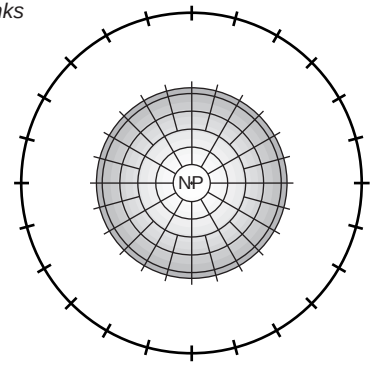
2. Using the diagram, what is the Greenwich Sidereal Time (GST)?

3. Using the diagram, what is the Right Ascension of the star?



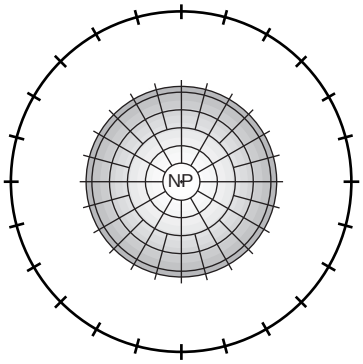
4. Using the diagram, what is the Right Ascension of the sun?

Use the following blank diagrams for scratch, if needed. More blanks can be found at the class website.



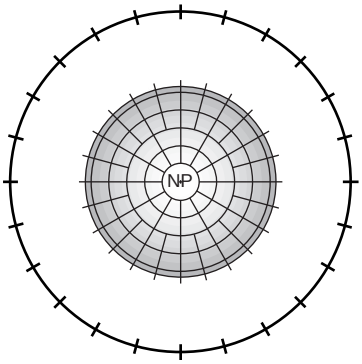
5. From the diagram, what is the approximate date?

6. What is the longitude of a location where the LST is 3 hours and the GST is 11 hours? Answer must be between 0° and 180° E or W.



7. What is the LST at longtude 90°W if the GST is 3 hours? Your answer must be between 0h and 24h.

8. The star Pollux (RA=8h, Dec=+28°) is transiting at longitude 60°E. What is the GST? Your answer must be between 0h and 24h.



9. The longitude of a location is 45°E, the date is December 21, and the LMT is noon. What is the GST?

10. On October 21, what time (LMT) does the star Fomalhaut (RA=23h, Dec=-30°) transit for longitude 90°E?