

Quiz

- 1) To convert degrees, minutes, and tenths to decimal degrees:
 - a) multiply minutes and tenths by 60.
 - b) divide minutes and tenths by 60.
 - c) calculation uses the degree, minute, second conversion key.

- 2) In the NASR method, an Assumed Position is used. The Assumed Lo is chosen as:
 - a) the whole degree closest to the DR Lo.
 - b) the whole degree less than the DR Lo.
 - c) the nearest position to the DR Lo for which the LHA is a whole degree.
 - d) the whole degree of the LHA.

- 3) What are the entering arguments for the NASR tables to solve for the first triangle?
Ans: _____

- 4) In order to find F for the second triangle it is first necessary to determine the sign of Dec. How is this determined?
Ans: _____

- 5) The method of choosing an Assumed Position for use with Pub 229 is identical to that for the NASR method.
True or false?

- 6) Pub 229 should not be used for latitudes above 60°, unless special methods are used for interpolation.
True or false?

- 7) Since interpolation for declination in *Pub 229* is linear, and can be easily calculated, for this course, the use of the interpolation table is optional.
True or false?

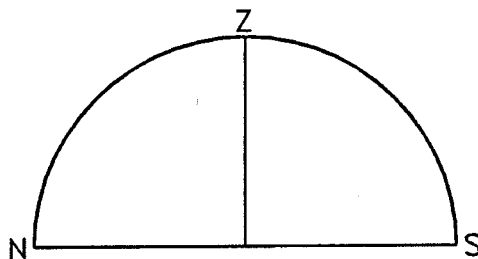
- 8) With Pub 229, no interpolation is needed for azimuth angle.
True or false?

- 9) What are the entering arguments to Pub 229?
 - a) _____
 - b) _____
 - c) _____

Quiz

- 1) Polaris is very near the North Celestial Pole. Special tables in the *Nautical Almanac* let us use a shortcut to find:
 - a) Lat in the N hemisphere.
 - b) Long in the N hemisphere.
 - c) Lat in the S hemisphere.
 - d) Long in the S hemisphere.

- 2) Complete the adjacent half diagram to show how to get Lat from a meridian sight with:
 $H = 45^\circ$, $Z_n = 180^\circ$, $Dec = 15^\circ S$

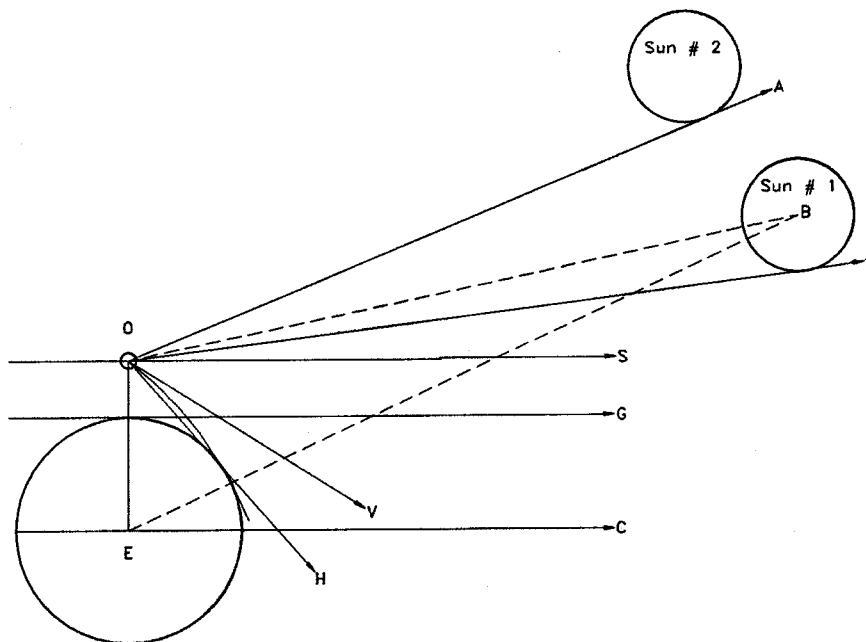


- 3) Averaging a run of sights can reduce:
 - a) Systematic errors.
 - b) Random errors.
 - c) Both Systematic errors & Random errors.

- 4) With the special Polaris Method using the *Nautical Almanac* Polaris pages, the azimuth should be accurately plotted.
 True or False?

- 5) When a body is at upper transit, the navigational triangle collapses into a single line:
 therefore $LHA = \underline{\hspace{2cm}}^\circ$ and Z_n becomes $\underline{\hspace{2cm}}^\circ$ or $\underline{\hspace{2cm}}^\circ$.

Quiz



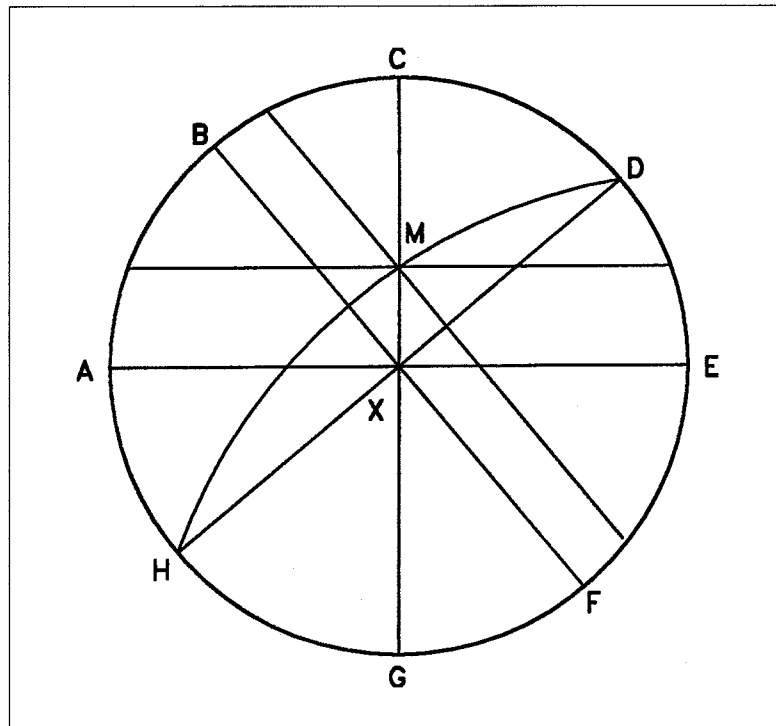
1) Identify and match the following

- Hs
- Ha
- Ho
- Dip
- Astronomical refraction
- Semi-diameter
- Parallax

From angles

- AOT
- AOS
- AOV
- BEC
- BOT
- OBE
- SOV

Quiz



- 1) The equator is: AE, CG, DH, BF?
- 2) The body is visible. True or false?
- 3) The azimuth is approximately: N, E, W, S?
- 4) The declination is: N or S?
- 5) The Latitude is: N or S?
- 6) The navigational triangle is: MXH, MXD, MCD, HXG, MHG?

Quiz

- 1) Convert $77^{\circ} 10.2'$ to time units.
- 2) Convert 9h 22m 44s to arc.
- 3) If GHA of the sun is 15° , what is GAT?
- 4) In West Lo, to convert UT to LMT:
 - a) Add ZD.
 - b) Subtract ZD.
 - c) Add Lo (converted to time units).
 - d) Subtract Lo (converted to time units).
- 5) At the instant the sun transits your meridian, what is LAT?
- 6) The EqT is the difference between _____ and _____.
- 7) If the meridian passage of the sun is later than UT 1200 what is the sign of the EqT?

Quiz

- 1) It is convenient to use the sun for compass correction when it is near the prime vertical. However, in North latitudes, this is only practical:
- a) beyond the Arctic Circle.
 - b) from vernal equinox until autumnal equinox.
 - c) from autumnal equinox until vernal equinox.
 - d) at any time.
- 2) The amplitude of a body is measured:
- From _____ (what circle?) in the direction _____ (one or more directions) to the center of the body.
- 3) *Bowditch* Table 22 (27) lists Amplitudes on the Celestial equator. Table 23 (28) gives corrections to get the amplitude on the visible horizon. If you are in North Latitude and it is summer, do you add or subtract the Table 23 (28) correction to the Sun amplitude to get to the visible horizon? (A sketch may help.)
- a) add
 - b) subtract
- 4) When the sun is on or near the prime vertical, why is it a good time to take compass bearings to determine deviation?
- Ans: _____
- 5) What is the true bearing of the sun when it is on the AM PV?
- Ans: _____

Quiz

- 1) In the evening, civil twilight is defined to begin at _____ and to end when the center of the sun is _____ degrees below the celestial horizon.
- 2) In an old song about a tropical region, there is a phrase “the dawn comes up like thunder.” This is a reference to:
 - a) morning thunderstorms being common in the tropics.
 - b) twilight is much shorter in the tropics than in higher latitudes.
 - c) the refraction correction changes quickly in the tropics.
 - d) poetic license, not describing a real effect.
- 3) Table 1 must be entered using data for the latitude less than the desired location, because:
 - a) the interpolation is non linear.
 - b) it is easier to add than subtract.
 - c) the statement is not true and we choose the nearest latitude.
 - d) people like to make N difficult.
- 4) Under the proper Tabular Interval, Table 1 must be entered using the difference between the true latitude and the nearest latitude that is less than the true latitude. True or False?
- 5) For accurately computing the times of CT, NT, and SR or SS from a moving vessel, what method is taught in this course?

Ans: _____

Quiz

- 1) To get the altitude and azimuth of one of the 57 stars plotted on the Star Finder, we do the following except:
 - a) choose the correct red template.
 - b) place "North" side up if in North latitude.
 - c) rotate so the arrow is over the computed LHA of Aries.
 - d) read H and Zn.

- 2) To plan for sight taking, it is useful to plot the planets and moon on the starfinder base. To locate the arrow on the red template, we use right ascension (RA), which is:
 - a) Declination minus longitude.
 - b) 360 minus GHA.
 - c) Longitude minus GHA.
 - d) 360 minus SHA.

- 3) In selecting which bodies should be observed in which order to obtain a good three body fix, which of these is least important?
 - a) angle of cut between azimuths
 - b) magnitudes
 - c) differences between declinations
 - d) observable altitudes

- 4) How is right ascension calculated for the moon?

Ans: _____

Quiz

1) Name the 4 planets other than earth of interest to the navigator:

Ans: _____, _____, _____, and _____.

2) Five days after the Vernal Equinox, the SHA of the Sun is approximately:

Ans: _____°.

3) A first magnitude star is (brighter or darker) than a second magnitude star:

- a) brighter.
- b) darker.

4) The closest celestial body (other than earth) used in navigation is:

Ans: _____.

5) Is a solar day longer or shorter than a sidereal day?

- a) Longer
- b) Shorter

6) What is the approximate difference in time for question 5?

Ans: _____

7) Can you tell whether a body is visible or not by using the time diagram?

Ans: _____

8) What is the SHA of the sun at

- a) vernal equinox? _____
- b) winter solstice? _____

Quiz

- 1) Great Circle Sailing uses a spherical triangle much like the navigational triangle. Match the corresponding parts:
- | | |
|--------------------|-------------------------|
| a) Zenith distance | 1) DLo |
| b) Azimuth angle | 2) Initial course angle |
| c) t | 3) Starting Latitude |
| d) declination | 4) Destination Latitude |
| e) Latitude | 5) Distance |
- 2) To follow a great circle course, one must change true course at intervals, whereas if one holds a constant true course, one follows a _____ line.
- 3) The Law of Cosines method requires a graphical correction in addition to the results found mathematically.
True or False?

Quiz

- 1) An Analemma curve shows:
 - a) speed and engine RPM.
 - b) EqT and GHA of the sun.
 - c) EqT and Declination of the Sun.
 - d) Conversion of GMT to LAT.

- 2) Celestial objects whose declinations are near 0° , like the belt of Orion, are useful to determine direction because they rise and set at Zn values of _____ $^\circ$ and _____ $^\circ$.

- 3) If the sun rises at $Zn = 110^\circ$, it will set at $Zn =$ _____ $^\circ$. This relation is useful to check a compass.

- 4) Declination of the Sun can be approximated by using a circle such as on a CLS plotting sheet. The maximum declination (used as the radius of the Circle) is about:
 - a) 10 degrees.
 - b) 12.25 degrees.
 - c) 23.45 degrees.
 - d) 34.56 degrees.
 - e) 90 degrees.

- 5) The equation of time is generally larger in the spring and summer than in the fall and winter.
True or false?

- 6) Polaris and the trailing stars of Ursa Major and Cassiopeia appear in a vertical line.
 - a) What is the azimuth of Polaris?
 - b) How much error is there between the Ho of Polaris and the observers latitude?