

Demo PDF file. This file includes questions: 10 from 54. Full version of file looks the same as demo, but full version includes all questions. You may download file with all questions by link on bottom of this page

Q194 - Navigation Problems: Oceans

1. Your 0830 DR position is LAT 27°33'S, LONG 79°17'E. Your vessel is on a course of 066°T, at a speed of 19.5 knots. Determine the time of LAN on 10 December.

- 1131
- 1136
- 1153
- 1215

Note:

To determine the time of Local Apparent Noon (LAN), advance the DR position to the approximate time of meridian passage, then use the Nautical Almanac to find the Sun's Greenwich Hour Angle (GHA) corresponding to the longitude at that advanced position.

2. Your 0900 DR position is LAT 23°16'N, LONG 146°12'E. Your vessel is on a course of 286°T, at a speed of 14.5 knots. Determine the zone time of LAN on 14 March.

- 1151
- 1209
- 1223
- 1228

Note:

To determine the zone time of Local Apparent Noon (LAN), use the Nautical Almanac's Sun meridian passage time, correct for longitude at LAN, and apply the appropriate zone description.

3. At 0915 zone time on 7 November you depart Seattle, LAT 47°36.0'N, LONG 122°22.0'W, (ZD +8). You are bound for Kobe, LAT 34°40.0'N, LONG 135°12.0'E, and you estimate your speed of advance at 18.5 knots. The distance is 4,527 miles. What is your estimated zone time of arrival at Kobe?

- 1257, 17 November
- 0657, 18 November
- 1857, 18 November
- 0657, 19 November

Note:

The correct arrival time is determined by converting the departure zone time to GMT, adding the steaming time, and then converting the resulting GMT to the arrival zone time, accounting for zone descriptions and date changes.

4. On 1 December your 1600 ZT DR position is LAT 22°48.0'S, LONG 91°26.0'E. You are on course 327°T at a speed of 16 knots. What will be the zone time of sunset at your vessel?

- 1823
- 1827
- 1831
- 1847

Note:

Determine the zone time of sunset by obtaining the local mean time of sunset from the Nautical Almanac for the given latitude, then applying the longitude and time zone correction.

5. On 1 July your 0515 ZT fix gives you a position of LAT 24°36.0'S, LONG 151°42.0'W. Your vessel is on course 300°T, and your speed is 10.0 knots. Local apparent noon (LAN) occurs at 1215 ZT, at which time a meridian altitude of the Sun's lower limb is observed. The observed altitude (Ho) for this sight is 42°55.0'. What is the calculated latitude at LAN?

- 24°03.6'S
- 24°02.5'S
- 24°01.0'S
- 24°00.0'S

Note:

The calculated latitude at LAN is 2401.0'S, determined by running a dead reckoning from the initial position to LAN, accounting for speed, time, and course, and confirmed by applying the noon sight formula using the observed altitude and the Sun's declination.

6. On 1 September your 1115 zone time DR position is LAT 25°20.0'N, LONG 28°24.0'W. At that time, you observe the Sun bearing 160.5°psc. The chronometer reads 01h 14m 58s, and the chronometer error is 01m 17s fast. The variation is 13.5°W. What is the deviation of the standard compass?

- 2.1°E
- 4.1°E
- 11.0°W
- 11.0°E

Note:

The deviation is 2.1E, calculated by subtracting the variation and compass bearing from the true bearing obtained through sight reduction.

7. On 11 May in DR position LAT 28°13.7'N, LONG 168°36.3'E, you observe an amplitude of the Sun. The Sun's center is on the celestial horizon and bears 283°psc. The chronometer reads 07h 13m 19s and is 02m 56s slow. Variation in the area is 13°E. What is the deviation of the standard magnetic compass?

- 5.2°W
- 5.6°W
- 7.4°E
- 7.8°E

Note:

The deviation is 5.6W. The true bearing of the Sun (290.4T) minus the observed compass bearing (283psc) and the variation (13E) equals the deviation.

8. On 12 March your 1846 zone time DR position is LONG 129°16.5'W. At that time you observe Polaris with a sextant altitude (hs) of 28°01.5'. The chronometer time of the sight is 03h 44m 10s, and the chronometer error is 01m 55s slow. The index error is 2.2' off the arc, and the height of eye is 59.8 feet (18.2 m). What is your latitude by Polaris?

- 27°33.7'N
- 27°40.9'N
- 27°54.4'N
- 28°06.9'N

Note:

The latitude is determined by correcting the sextant altitude for index error, dip, and refraction, then applying the Polaris correction from the Nautical Almanac based on the date and LHA Aries, resulting in a latitude of 2733.7'N.

9. On 12 September your 0600 zone time (ZT) fix gives you a position of LAT 22°51.9'N, LONG 133°40.1'W. Your vessel is on course 062°T, and your speed is 12.3 knots. Local apparent noon (LAN) occurs at 1142 ZT, at which time a meridian altitude of the Sun's upper limb is observed. The observed altitude (Ho) for this sight is 70°33.2'. What is the calculated latitude at LAN?

- 23°23.0'N
- **23°24.8'N**
- 23°26.5'N
- 23°27.9'N

Note:

The correct latitude at LAN is 2324.8'N, determined by advancing the initial position along the vessel's course and speed, and by reducing the observed Sun's meridian altitude.

10. At 1200 zone time on 10 October, you depart San Francisco, LAT 37°48.5'N, LONG 122°24.0'W (ZD +8). You are bound for Yokohama, LAT 35°27.0'N, LONG 139°39.0'E, and you estimate your speed of advance at 22 knots. The distance is 4,536 miles. What is your estimated zone time of arrival at Yokohama?

- 0111, 19 October
- 0211, 19 October
- 1011, 19 October
- **1911, 19 October**

Note:

The correct arrival time is determined by converting the departure zone time to GMT, adding the steaming time, and then converting the result to the destination zone time, yielding 1911 on 19 October.
