

Demo PDF file. This file includes questions: 10 from 70. 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

Q372 - Navigation Problems: Chart Plot

1. The Light List shows that a navigational light has a nominal range of 15 miles and a height above water of 29 feet (8.8 meters). Your height of eye is 52 feet (15.8 meters) and visibility is 6.0 miles. At which approximate range will you first sight the light?

- 8.0 miles
- **11.0 miles**
- 14.5 miles
- 16.0 miles

Note:

The light's visibility is limited by both its geographic range (approximately 14.7 nautical miles) and its luminous range (approximately 11 nautical miles due to 6-mile visibility). The shorter of these distances, 11 nautical miles, determines when the light will first be sighted.

2. The following questions are based on Chart 12221TR, Chesapeake Bay Entrance, and the supporting publications. Your present course is 202°T and your vessel's engines are turning RPMs for 18 knots. Your height of eye is 54 feet (16.5 meters) and your vessel's draft is 28 feet (8.5 meters). Use 10°W variation where required. At 0800 your position is LAT 37°21.0'N, LONG 75°32.0'W. Assuming that there is no set and drift, what time would your vessel cross the 60-foot curve?

- 0816
- **0813**
- 0809
- 0822

Note:

The vessel's position at 0800, course, and speed indicate it will cross the 60-foot curve at 0813. This is calculated by determining the distance to the curve along the vessel's track (approximately 3.9 nautical miles) and dividing that distance by the vessel's speed (18 knots), resulting in a time of 13 minutes.

3. At 0800 you reduce speed from sea speed. Speed was reduced by the time you passed abeam of Hog Island Lighted Bell Buoy "12" at 0814. At this time Buoy "12" was abeam on your starboard side at a distance of 0.65 mile. Assuming you continue to make good your course of 202°T, what is your new speed if you pass abeam of Cape Charles Lighted Bell Buoy "14" at a distance of 1.5 miles at 0907?

- 13.6 knots
- 12.3 knots
- **12.9 knots**
- 12.0 knots

Note:

The correct speed is 12.9 knots. The distance of 11.4 nautical miles run along a course of 202T between 0814 and 0907, divided by the 53-minute time interval, yields a speed of approximately 12.9 knots.

4. Visibility is exceptionally clear. At approximately what distance did Chesapeake Light become visible?

- 19.2 miles
- **21.0 miles**
- 22.7 miles
- 24.0 miles

Note:

Given exceptionally clear visibility, Chesapeake Light's visibility is limited by its geographic range, which is approximately 21.0 miles based on the provided heights of eye and light.

5. At 0907 you change course to 224°T, and your speed is now 13.0 knots. At 0939 Chesapeake Light is bearing 168°T at a distance of 7.1 miles, and Cape Henry Light is bearing 246°T. What were the set and drift since 0907?

- 326°T at 0.7 knot
- **146°T at 1.4 knots**
- 146°T at 0.7 knots
- 326°T at 1.4 knots

Note:

The current's set and drift were determined by comparing the dead reckoning position with the actual fix at 0939, revealing a displacement of approximately 0.75 nautical miles on a bearing of 146T over 32 minutes, resulting in a drift of 1.4 knots.

6. From your 0939 position, you wish to change course in order to pass 0.3 mile north of Buoy "NCA" (LL#375) in the inbound traffic lane. You estimate the current to be 150°T at 2.0 knots. What course should you steer to make good the desired course? Your speed is still 13.0 knots.

- 232°T
- **245°T**
- 249°T
- 235°T

Note:

To pass 0.3 nautical miles north of Buoy NCA, a course of 245T is required to compensate for the current's effect on your vessel's track.

7. At what time will you enter the inbound traffic lane with Buoy "NCA" (LL #375) bearing 180°T at 0.3 mile?

- 1003
- 0951
- 0948
- **0957**

Note:

To determine the time a vessel will enter the inbound traffic lane, plot the specified bearing and distance from the buoy on the chart, identify the intersection with the vessel's track, and calculate the time to reach that point using the vessel's speed.

8. At 1010 your vessel passes close abeam to Buoy "NCB" in the inbound traffic lane. At this time the Chesapeake Bay Pilot informs you that he will not board your vessel until 1100. The pilot boat is located 1.5 miles northeast of Cape Henry Light. What should you reduce your speed to in order to arrive at the pilot boat at this time?

- 5.9 knots
- 7.5 knots
- **8.2 knots**
- 9.8 knots

Note:

To arrive at the pilot boat by 1100, you must travel approximately 6.8 nautical miles in 50 minutes (0.83 hours), requiring a speed of 8.2 knots.

9. After the pilot boards, he tells you the gyro has a 2°E error. If this is true, what should the bearing be along Trestle C of the Chesapeake Bay Bridge-Tunnel as your vessel passes abeam of it?

- 052°pgc
- 049°pgc
- **047°pgc**
- 045°pgc

Note:

The correct gyro bearing is determined by subtracting the gyro error from the charted true bearing. A 2E gyro error means the gyro reads 2 less than true, so 049T - 2 = 047G.

10. Your vessel's heading is 330°pgc and 345°psc with a 2°E gyro error. What is the deviation on this heading?

- 4°E
- 0°
- **3°W**
- 7°W

Note:

The deviation is 3W. This is calculated by first determining the true heading (332T) from the gyro heading and gyro error, then finding the compass error relative to true (-13), and finally separating the compass error into variation (-10) and deviation (-3).
