
Q172 - Navigation Problems: Chart Plot

1. The level of mean high water at Old Point Comfort is how many feet above the sounding datum?

- 3.5 feet
- 1.5 feet
- **2.5 feet**
- 2.2 feet

Note:
The tide table for Old Point Comfort indicates that mean high water is 2.5 feet above the sounding datum, making option C the correct answer.

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2. You are on course 027° per magnetic compass when you take the following bearings per magnetic compass: New Point Comfort Spit Light "2": 253° Horn Harbor Entrance Light HH: 282° Wolf Trap Light: 348° What is the position of the fix?

- **LAT 37°19.7'N, LONG 76°09.9'W**
- LAT 37°19.7'N, LONG 76°10.3'W
- LAT 37°19.4'N, LONG 76°09.8'W
- LAT 37°19.4'N, LONG 76°09.5'W

Note:
Choice A is correct; the intersection of lines of position plotted from the given compass bearings to charted objects is located at LAT 3719.7'N, LONG 7609.9'W.

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3. You sight Tue Marshes Light (LAT 37°14.1'N, LONG 76°23.2'W) in line with Goodwin Thorofare Light "16" (LAT 37°13.7'N, LONG 76°25.0'W) dead ahead bearing 264° per standard magnetic compass. Which statement is TRUE?

- **The compass error is 11°W.**
- The deviation is 1°W for a bearing of 264° only.
- The variation is 9°W for a bearing of 264° only.
- The deviation table must be corrected for the change in date.

Note:
The compass error is 11W, as the observed compass bearing (264) exceeds the true bearing (253) by that amount.

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4. At 1919 your position is LAT 37°00.5'N, LONG 75°43.8'W. At 2019 your position is LAT 37°00.0'N, LONG 75°30.0'W. What is the course made good?

- 090°T
- 096°T
- 099°T
- **093°T**

Note:
The course made good is determined by the change in latitude and longitude between the two positions. Calculating the departure and latitude change, then using trigonometry, yields a course of 093T, slightly south of due east.

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5. What will be the average direction of the current in Lynnhaven Roads at 1000 DST (ZD +4) on 23 July 1983?

- 305°T
- 125°T
- **Almost slack water**
- 070°T

Note:
At the specified time and date, the Tidal Current Tables for Lynnhaven Roads indicate a current speed near zero, therefore the correct answer is almost slack water, as there is no meaningful average direction.

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6. At 0914 you are in Chesapeake Bay southeast inbound lane with buoy "CBJ" close aboard to port. What is your ETA at Thimble Shoal Channel Buoy "19" if you are making 10.9 knots?

- 1042
- 1046
- 1034
- **1038**

Note:
The ETA at Thimble Shoal Channel Buoy "19" is 1038. The charted distance from buoy "CBJ" is approximately 15.3 nautical miles, and at a speed of 10.9 knots, this requires a running time of approximately 1 hour and 24 minutes, resulting in an ETA of 1038.

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7. Your position is LAT 37°00.0'N, LONG 75°30.0'W. What is the course to steer per standard magnetic compass to arrive at LAT 36°59.0'N, LONG 75°48.5'W, if you are making 7.8 knots, the current is 239°T at 1.3 knots, and a southeasterly wind is causing 3° of leeway?

- 282°psc
- 271°psc
- 274°psc
- **278°psc**

Note:
To reach the destination, calculate the true course accounting for current and leeway. First, determine the rhumb-line track, then adjust for the current's effect and the wind-induced leeway. Finally, convert the true course to a per standard compass (psc) reading using the provided variation and deviation.

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8. At 0919 your position is LAT 37°00.0'N, LONG 75°30.0'W. You are on course 270°T at 7.8 knots. At 1035 your position is LAT 37°00.5'N, LONG 75°43.8'W. What was the set and drift?

- 113° at 1.2 knots
- **292° at 1.0 knot**
- 281° at 0.7 knot
- 305° at 1.3 knots

Note:
The difference between the dead-reckoned position and the actual fix indicates a northwest current with a bearing of approximately 292 and a speed of about 1.0 knot.

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9. Your GPS position is LAT 36°59.0'N, LONG 75°48.6'W. What is the course per standard magnetic compass to a position one mile south of Cape Charles Lighted Bell Buoy "14" (LAT 37°07.4'N, LONG 75°41.0'W)?

- 053° psc
- 057° psc
- **045° psc**
- 049° psc

Note:
A position one mile south of Cape Charles Lighted Bell Buoy "14" is located at LAT 3706.4'N, LONG 7541.0'W. Calculating the true course from the starting position to the destination, applying the chart's westerly variation, and correcting for deviation results in a standard compass course of 045 psc.

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10. You are considering anchoring approximately three miles northeast of Chesapeake Light. After examining the chart you decide not to because of the _____.

- area being designated as a National Marine Sanctuary
- large number of wrecks
- coral being designated as a special protected area
- **danger of unexploded mines**

Note:
Anchoring near Chesapeake Light is unsafe due to a charted danger area with unexploded mines. Mariners should avoid anchoring in charted mine danger areas to prevent detonation or disturbance of unexploded ordnance.
