

## Final Exam

Plot the following positions based of the information provided:

1.

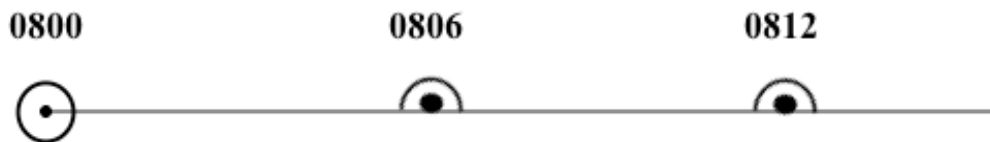
<b>Bearings @ 0800</b>	
Radio Tower (Western)	035°
Y “AN” Fl Y 4s	130°
Fl G 4s 15ft 4M “1L”	005°

<b>Sailboat Information</b>	
Course	150°
Speed	3 knots
Fix Interval	6 minutes

- What is the sounding (depth of water) at your position? 24 ft
- How far are you from shoal water (light blue)? ~120 yards
- What is the meaning of “Fl G 4s 15ft 4M”?

**Flashing Green every 4 seconds, 15ft tall, visible at 4 miles**

Example of a proper plot:



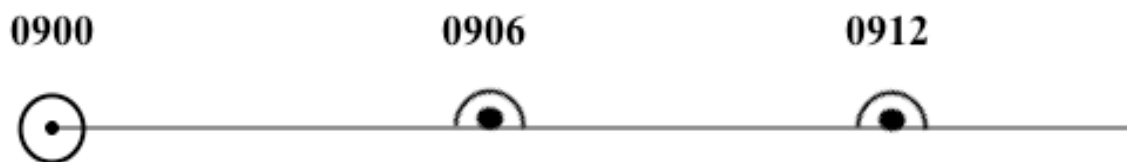
2.

<b>Bearings @ 0900</b>	
Fl G 4s 15ft 4M "1AH"	165°
R "2" Fl R 2.5s	110°
Hotel (on Bay Ridge Beach)	245°

<b>Sailboat Information</b>	
Course	060°
Speed	5 knots
Fix Interval	6 minutes

- What is the sounding (depth of water) at your position? 15 ft
- How far are you from the "1AH" light? ~1100 yards

Example of a proper plot:



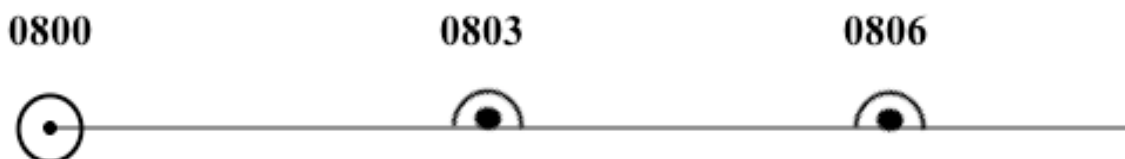
3.

<b>Bearings @ 0800</b>	
Capital Dome	270°
G "5" Fl G 4s	150°
Tank (North of Engineering Lab)	030°

<b>Sailboat Information</b>	
Course	330°
Speed	4 knots
Fix Interval	3 minutes

- What is the sounding (depth of water) at your position?   21   ft
- At this speed, how long before you reach the bridge?  
  ~13   minutes

Example of a proper plot:



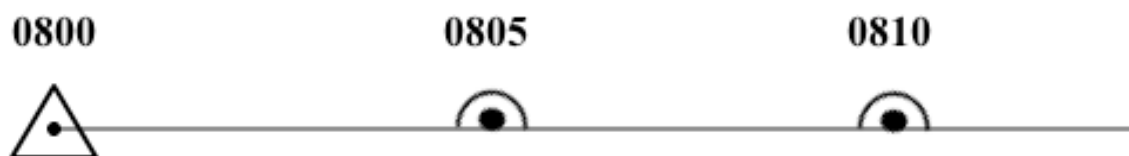
4.

<b>GPS Position @ 0800</b>	
Latitude	38° 59' 00"
Longitude	076° 26' 30"

<b>Sailboat Information</b>	
Course	180°
Speed	3 knots
Fix Interval	5 minutes

- What is the sounding (depth of water) at your position? 13 ft
- At this speed, how long before you reach the R "2" buoy (Fl R 2.5s)? ~34 minutes

Example of a proper plot:



**\*Notice\*** the fix for a GPS is a triangle instead of a circle

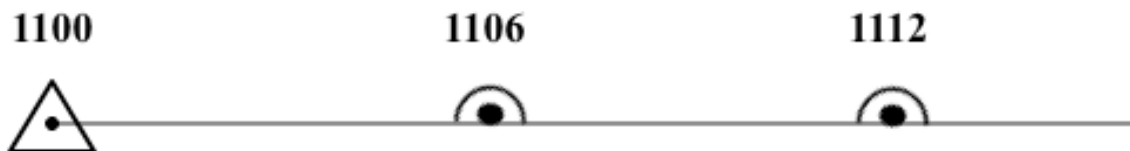
5.

<b>GPS Position @ 1100</b>	
Latitude	38° 58' 30"
Longitude	076° 26' 00"

<b>Sailboat Information</b>	
Course	150°
Speed	4 knots
Fix Interval	6 minutes

- What is the sounding (depth of water) at your position? 17 ft
- If you were to change course to 240°, how long before you reach the shallow water while sailing at a speed of 4 knots?  
~24 minutes

Example of a proper plot:



**\*Notice\*** the fix for a GPS is a triangle instead of a circle

6. The sailboat *Bull* sets sail from Annapolis bound for Kent Island, 30 miles away. She sails the most direct route and sails a speed of 10 knots.

The sailboat *Bear* sets sail from Kent Island bound for Annapolis (30 miles away). She too sails the most direct route and sails at a speed of 6 knots.

**\*Show your work\***

- (1) How many hours before *Bull* reaches Kent Island?

$$30 \text{ miles} / 10 \text{ kts} = 3 \text{ hours}$$

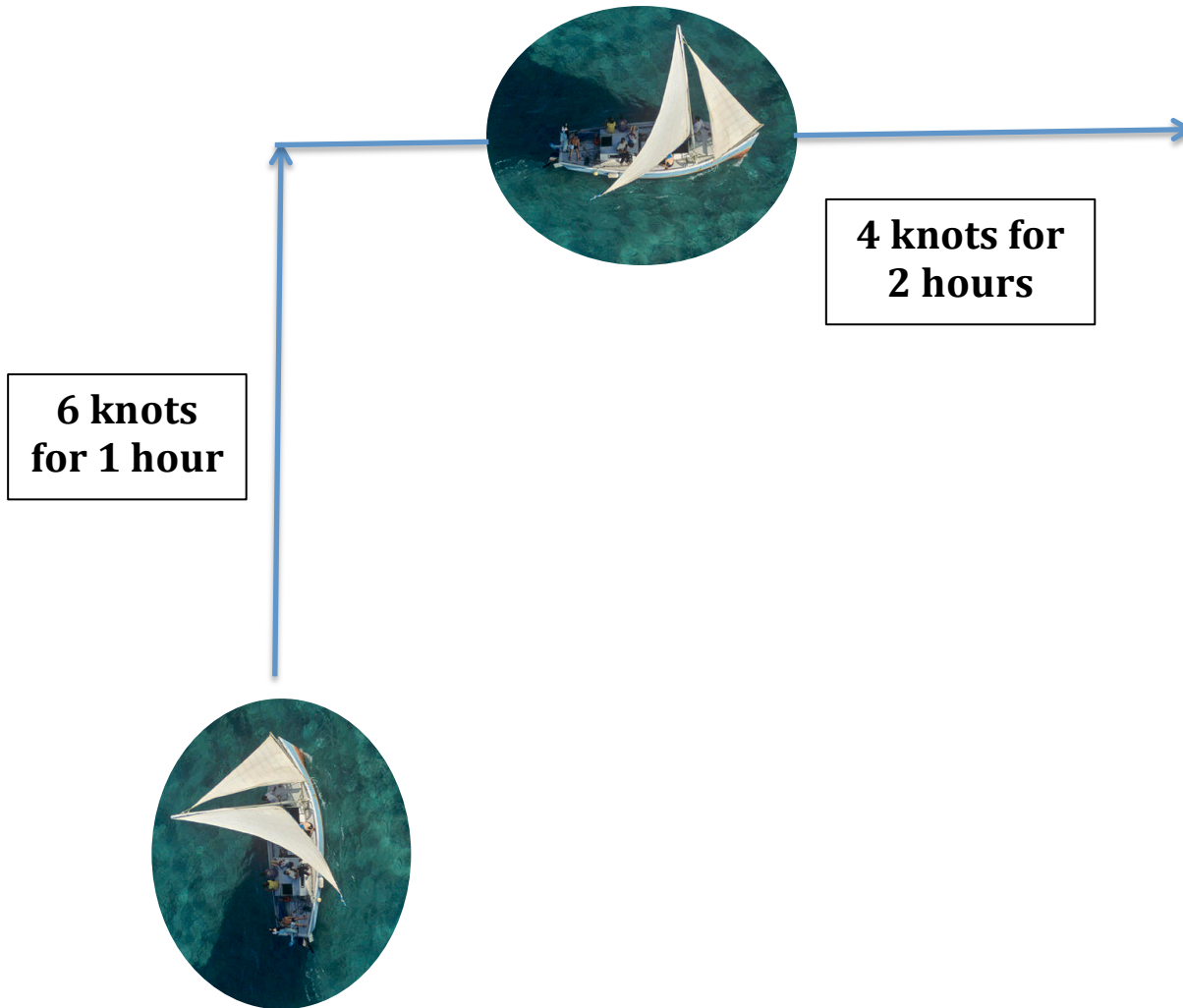
- (2) How many hours before *Bear* to reach Annapolis?

$$30 \text{ miles} / 5 \text{ kts} = 6 \text{ hours}$$

- (3) How long before *Bull* and *Bear* meet in the middle of their voyage across the Chesapeake Bay?

$$30 \text{ miles} / (10 + 5) = 2 \text{ hours}$$

7. *Bull* set sail heading north at a speed of 6 knots. After 1 hour she turns east and sails at a speed of 4 knots for 2 hours.



- (1) How many total miles has *Bull* sailed in 2 hours?  
 **$6 \text{ kts} * 1 \text{ hr} + 4 \text{ kts} * 2 \text{ hrs} = 14 \text{ miles}$**

- (2) How far is *Bull* from her original location?

**$6^2 + 8^2 = 100 \rightarrow = 10 \text{ miles from original location}$**