

3.2 Investigation “Direction, Bearing and Navigation”, Name: _____

Objective:

- Solve bearing problems using properties of parallel lines.
- Read two types of bearings
- Make scale drawings

Materials:

- A. ruler
- B. protractor
- C. paper
- D. pencil
- E. eraser

Procedure:

- A. **Make** some notes on how both types of bearings are used from the link below.
- B. **Make** a **scale drawing** for each problem in the Problem Set (only work on one side of paper).
- C. **Use** a **ruler** and **protractor**.
- D. **Show** the **scale** and **label** all part of **the drawing**.
- E. **Answer** the **questions** in complete sentences using **units**.
- F. **Staple** all work and submit.

Problem Set:

1. Fishing Boat Problem (start on the middle left side)

- a. A fishing boat is **3 kilometers** at a bearing **due East** from Osprey Point.
- b. What is the distance and bearing **from** the fishing boat **to** Osprey Point?
- c. An hour later the same fishing boat drifts **due south 4 kilometers**.
- d. **What** is the distance and bearing of the fishing boat from Osprey Point?
- e. **What** is the distance and bearing of Osprey Point from the fishing boat? **What** do you notice about the angle?
- f. Do you know the **Pythagorean Theorem**? How does it apply here?



2. Tugboat Problem (start middle left)

- A tugboat and barge is **800 yards** at a direction of **N 60° E** from a Cape Henry Lighthouse.
- What is the direction **from the tugboat to the lighthouse**?
- The tugboat then pulls the barge **400 yards S 30° E**.
- What is the distance and bearing **from the lighthouse to the tugboat**? What kind of triangle was created in this drawing?
- What** is the bearing in azimuth from the tugboat to the lighthouse from the second position?



Challenge: Cruise Ship Problem

- The S.S. Independence left port in Honolulu at a bearing of **235°** going **3 miles**.
- What angle must the ship turn to go due north?
- The ship then goes **4.5 miles** due **north**.
- The ship then turns and goes **100°** for **6 miles**.
- What is the final direction and distance from the **cruise ship** to the **port** in Honolulu?

