1. Go over problems from quiz.

2. Do Topic E, example 6 on your calculator.

3. Topic I. How accurately does one need to know the weight of each item to **dependably** determine the total weight of a dozen items to within 1 pound?
    a. Write an expression for the weight of one item.
    b. Use that to get an expression for the weight of twelve items.
    c. Set the "error part" of that expression equal to our maximum allowed error and solve. (See Example 5.)
4. Read Topic I, Example 6.

5. Go over Topic B, Example 11
    a. Consider the formula given for the cost line. Where did we get the slope? (Can you recognize the numerical value of the slope by thinking of the interpretation of slope and finding that number in the problem?)
    b. Where did we get the intercept for that formula?
    c. Consider the formula given for the revenue line. State the interpretation of the intercept. Can you see why the intercept must be zero?
    d. For the revenue, state the interpretation of the slope. Can you see why the slope must be 10?
    e. How can we find points and use those to find the formulas for the lines?
    f. Now that we understand both equations, discuss TWO WAYS to find the value for x that makes both y's equal. (That is, the number of appliances that makes the revenue equal the cost.)
6. Topic F. Drawing careful diagrams. Preliminary Skills. See next few pages.

Homework: No new homework on previous topics.
Topic F. Practice all the preliminary skills identified on the next pages.

Test 1: See Test Review and test dates from previous daily handout.

Quiz problems for next class:

1. We can manufacture hair dryers for a set-up cost of $30,000 and a variable cost per hair dryer of $6.93. We can sell these hair dryers to distributors for $11.41 each. Set up cost and revenue formulas and find the break-even point. (If you're graphing, estimate to the nearest 10 hair dryers. If you're solving it algebraically, find the result correct to the nearest one hair dryer.) Write your conclusion in a sentence.

2. If the scale on a map is 1:1200 and we want a possible error in the actual distance between two points to be less than 30 meters, how much error, in centimeters, can we have in the corresponding points on the map?

3. For the rounded number 13.00,
    a. tell the implied rounding precision
    b. underline the significant digits and
    c. give the interval of possible actual values that would be consistent with this rounded number.
    d. find the maximum amount the actual value could differ from the reported value.
    e. find the maximum percentage error in this measurement.

4. On the "bearing" page here, for diagram (d), give the bearing by both methods.

5. A real-world problem has a triangle with one side of 83 feet, another side of 63 feet and a 25^{o} angle between those two sides. Choose an appropriate scale factor, draw a careful diagram, and use measurement to approximate the length of the third side.

Topic F. Construction of Careful Diagrams

Preliminary skills:

1. Choose an appropriate scale factor, make a drawing, and label the drawing with both the measurements and the values they represent in the real world. Give the scale factor somewhere on the diagram.

   Exercise: A circular irrigation system is planned. The radius will be 75 feet. Use your compass to draw a careful diagram and label it with your scale factor, your measurement, and the real-world measurement.

2. Given an already-constructed diagram and a real-world measurement on it, find the scale factor. Then measure another length on the diagram and find the corresponding real-world length. (Practice with the page of circles, page 3.)

3. Use your protractor to measure angles, including angles larger than 90^o. (Practice with the page of arrows, page 4.)

4. Learn two methods of writing bearing. (See Topic F for description of those ways.) (Practice with the page of arrows, page 4. Write bearings in both methods.)

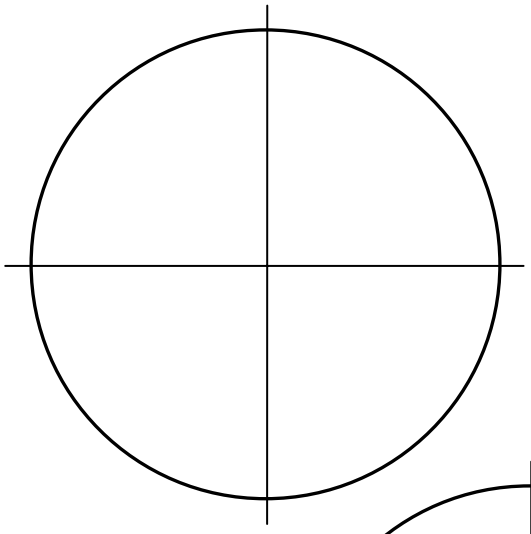
5. Identify a strategy for drawing parallel lines that are precisely parallel, not just approximately parallel. (Graph paper is helpful.)

6. Identify a strategy for drawing right angles quickly and easily. (Maybe graph paper, maybe the right triangles in your kit, maybe your protractor.)

7. Recall the fact concerning the angles from two parallel lines cut by another straight line. (Identify and measure corresponding angles on the page with the diagram of a ship's path.. Practice on page 5 here.)

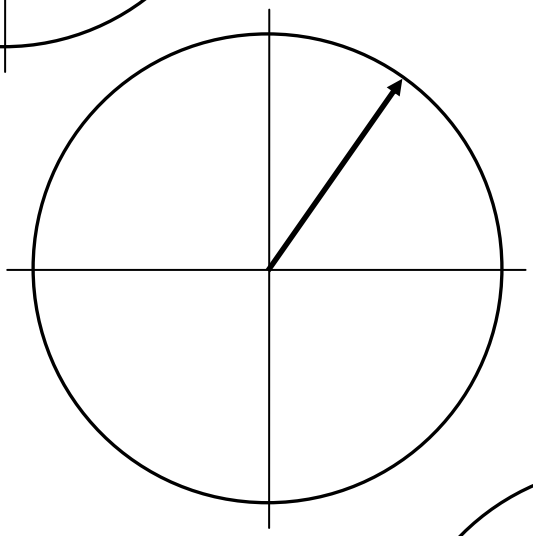
8. Solve a word problem by making a careful diagram with an appropriate scale factor and then measuring, and converting your measurement, to answer the question in the problem. (Solve the problem at the end of page 5 here.)

These three circles are all the same size.

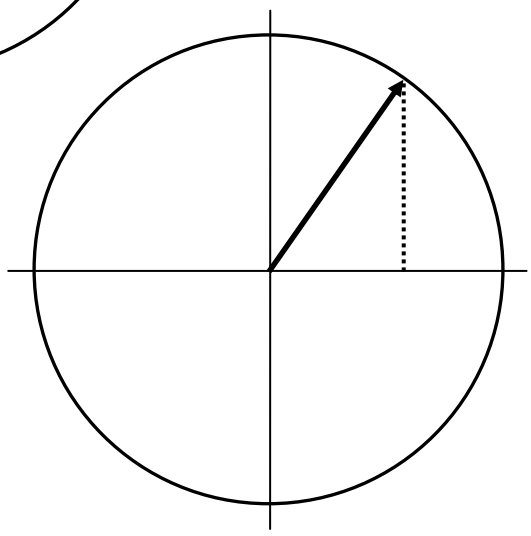


In this first diagram of a circle, how long is the radius in centimeters?

If the real-world circle that this diagram is made from has radius 1 meter, what is the scale factor of this drawing?



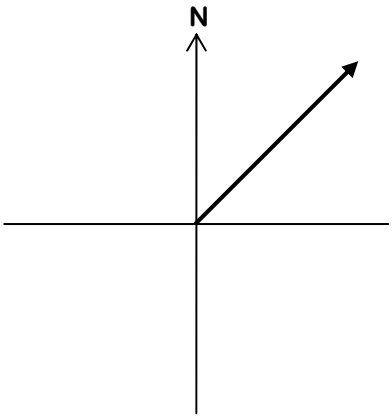
In the circle below, label the length of the arrow as 1 meter and use your scale factor to label the lengths of the other sides of the small triangle appropriately.



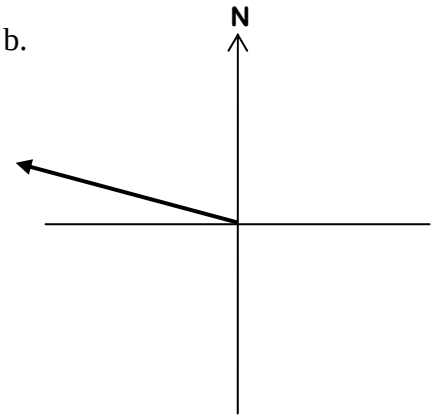
Diagrams to practice writing bearing

For each diagram, measure an appropriate angle.
Then write the bearing of the arrows in both ways.

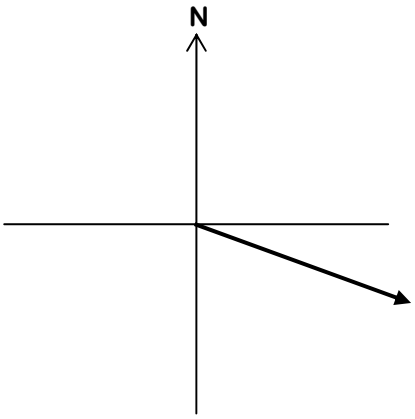
a.



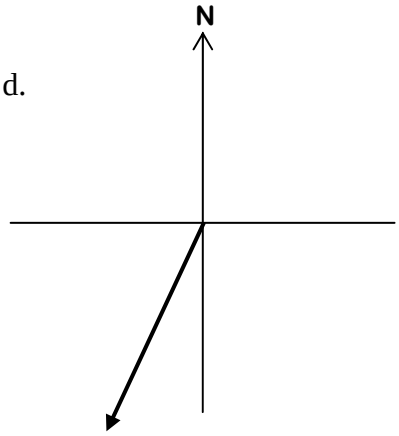
b.



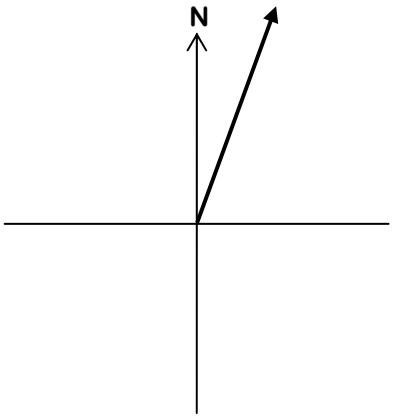
c.



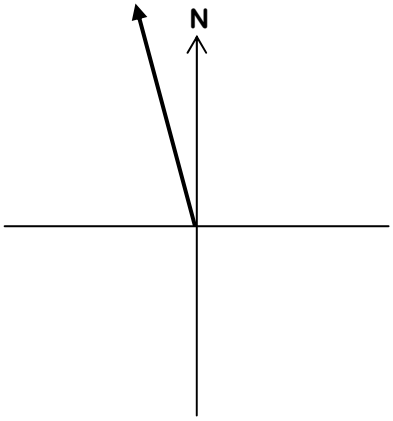
d.



e.

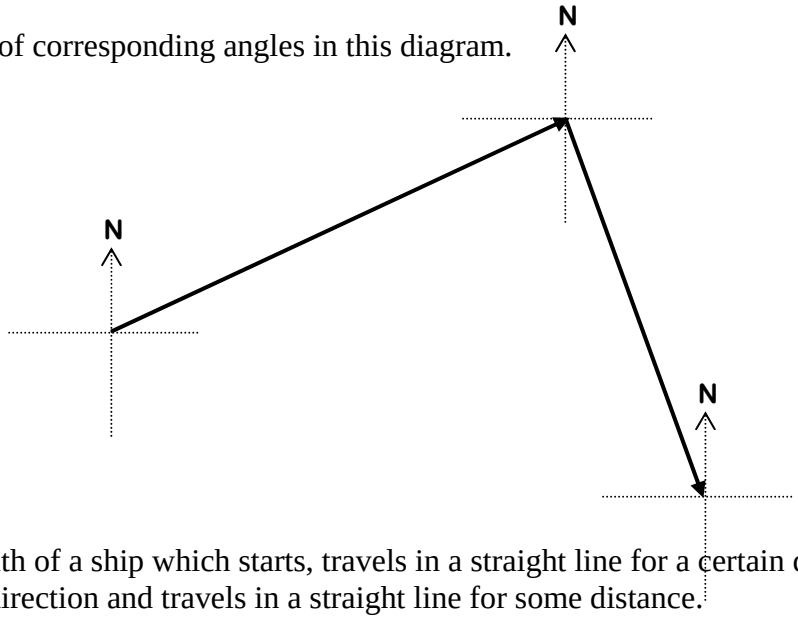


f.



1. Identify one pair of corresponding angles (which have the same measurement) in this diagram. Measure and see that you do find the same measurement.

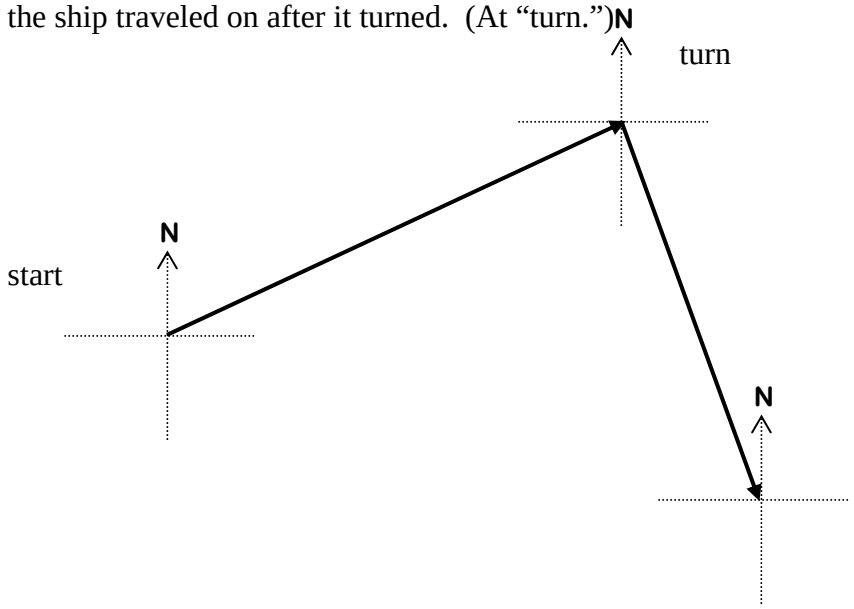
2. Identify a second pair of corresponding angles in this diagram.



The diagram represents the path of a ship which starts, travels in a straight line for a certain distance, then turns to take a different direction and travels in a straight line for some distance.

1. Write the bearing that the ship originally traveled on. (At "start.")

2. Write the bearing that the ship traveled on after it turned. (At "turn.")



3. If the ship traveled 90 miles from the start to where it turned, find the scale factor for this diagram, in terms of miles and centimeters.

4. Draw the line from where the ship started to where it ended. How many miles was this? (Measure and then use your scale factor to get the answer.)