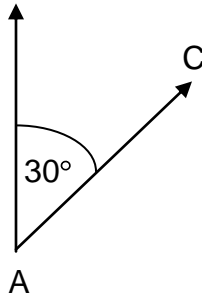Trig Worksheet – Bearings
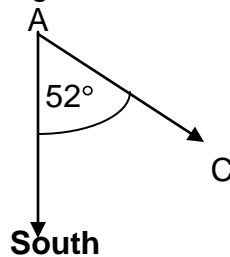
There are two ways to express a navigational heading or a "bearing".

1. When a single angle is given, it is understood that the bearing is measured in a clockwise direction from due north. The bearing from A to C is 30°.

2. The other system starts with a north or south line and uses an acute angle to show direction.

The bearing from A to C is S 52^0 E (52° East of South)

Give a diagram that represents each bearing.

1. bearing of 32^0

2. bearing of 304^0

3. N 42^0 E

4. S 31^0 E

5. N 52^0 W

Use these methods to draw a diagram to help you solve the following problems.

Problem 1: A ship travels 70 km on a bearing of 27^0, and then travels on a bearing of 147^0 for 180 km. Find the distance of the end of the trip from the starting point.

Problem 2: Two lighthouses are located on a north-south line. From lighthouse A the bearing of a ship 3742 m away is 129^0 43'. From lighthouse B the bearing of the ship is 39^0 43'. Find the distance between the lighthouses.

Problem 3: Radio direction finders are set up at points A and B, which are 2.00 mi. apart on an east-west line. From A it is found that the bearing of the signal from a radio transmitter is N 36^0 20' E, while from B the bearing of the same signal is N 43^0 40' W. Find the distance of the transmitter from B.

Problem 4: Radar stations A and B are on an east-west line, 3.7 miles apart. Station A detects a plane at C, on a bearing of 61^0. Station B detects the plane at a bearing of 321^0. Find the distance from A to C.