

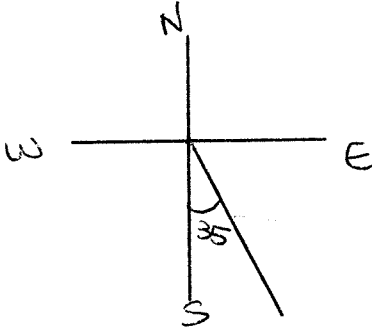
Geometry (H)

Section 8.7 – More Application Problems using Trig

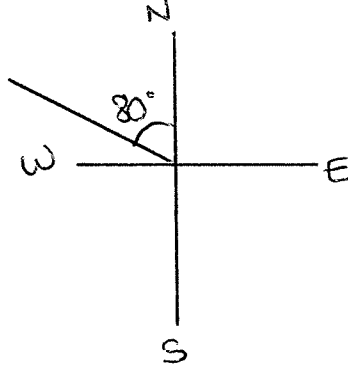
In surveying and navigations, directions are generally given in terms of **bearings**. A bearing measures the acute angle a path or line of sight makes with a fixed north-south line.

For example:

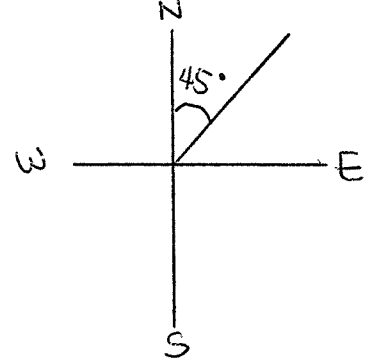
1. S 35° E



2. N 80° W

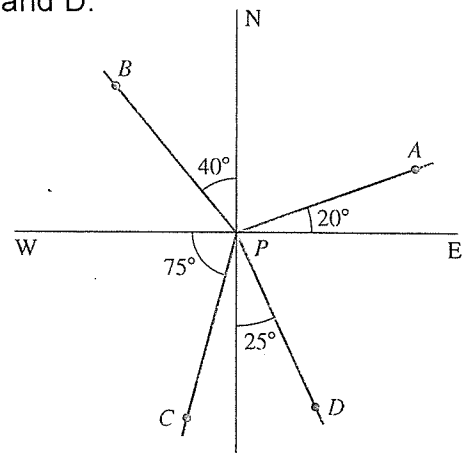


3. N 45° E



Let's look at a couple examples ...

1. Find the bearing from P to each of the points, A, B, C and D.



2. An airplane flying at 550 miles per hour has a bearing of N 58° E. After flying 1.5 hours, how far north and how far east has the plane traveled from its point of departure?

3. A plane is 160 miles north and 85 miles east of an airport. If the pilot wants to fly directly to the airport, what bearing should be taken? What distance must be traveled?

4. Ship A is due west of a lighthouse. Ship B is 12 km south of ship A. From ship B the bearing to the light house is $N 63^\circ E$. How far is ship A from the lighthouse?

5. A ship leaves port and travels due east for 15 miles, then changes course to $N 20^\circ W$ and travels 40 more miles. Find the bearing to the port of departure.

6. A ship leaves port at noon and heads due west at 20 knots (nautical miles). At 3 p.m. the ship changes course to N 54° W. Find the ship's bearing and distance from the port of departure at 5 p.m.

