Bearings

Learning Intention

1. To solve real-life problems using scale drawings.

Success Criteria

1. Interpret information in a problem to create a suitable scale drawing.

2. Use a scale drawing to solve a given problem.

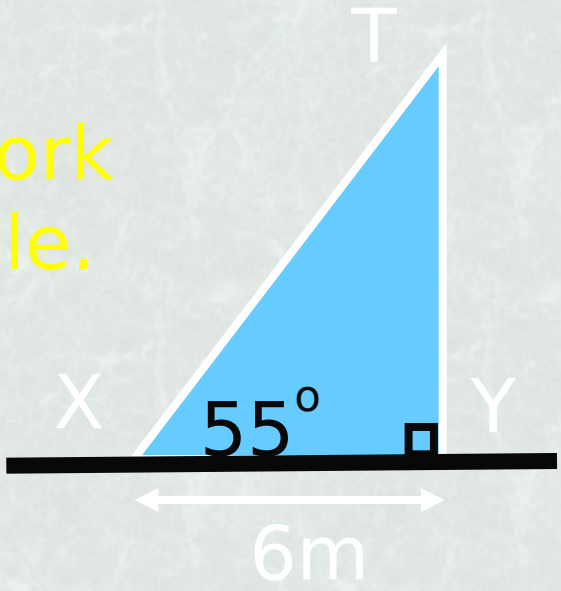
Scale Drawings & Bearings

Problem

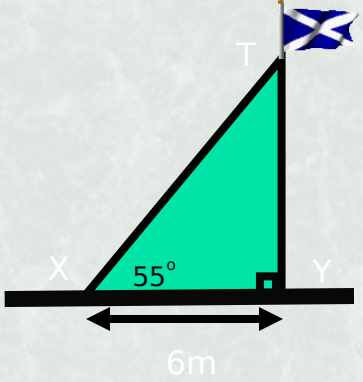
The sketch shows a flag-pole YT supported by a wire. The distance from X to Y is 6m and angle TXY = 55°.

Make a scale drawing and work Out the real height of the pole.

Use a scale of 1cm = 2m



Scale Drawings & Bearings



Solution

Using a scale of 1cm = 2m

Step 1: Draw line XY=3cm

Step 2: Draw a line straight up from Y.

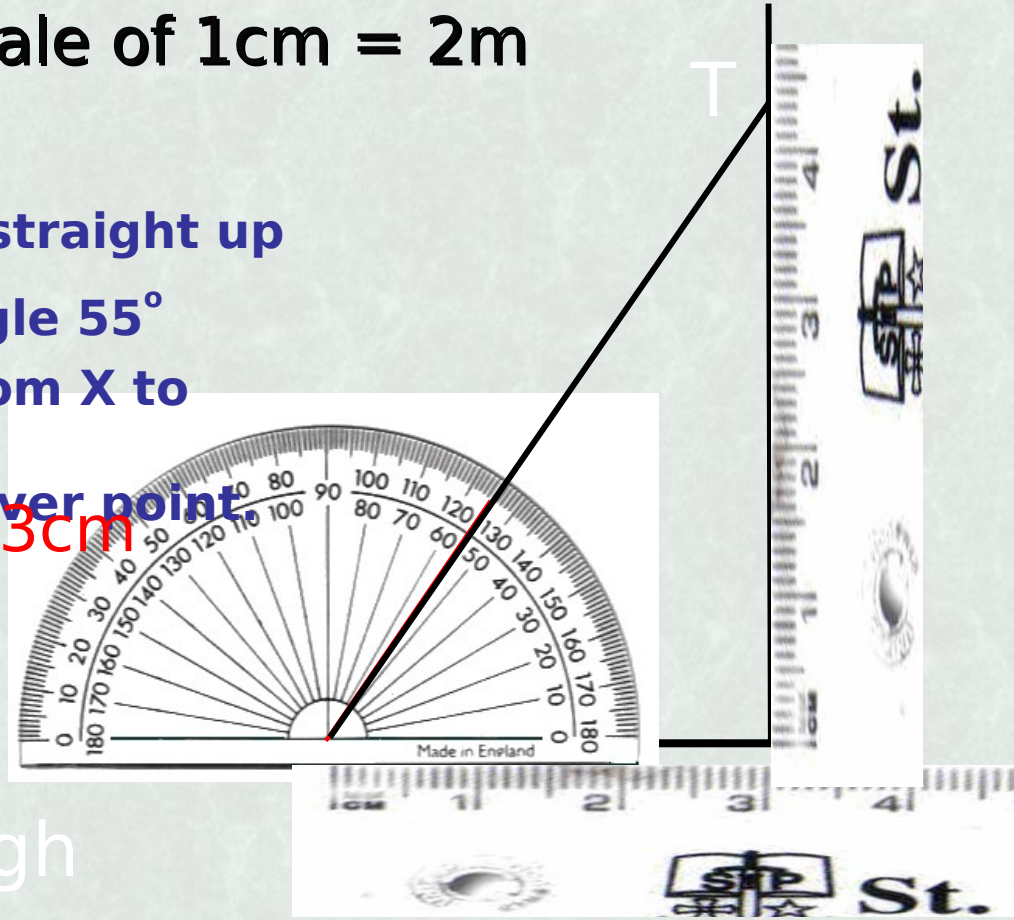
Step 3: Measure angle 55° from X.

Step 4: Draw line from X to vertical line and mark T at crossover point.

Step 5: Measure length YT. 4.3cm

Step 6: Multiply length YT. by scale factor.

4.3 x 2 = 8.6m



Flag pole is 8.6m high

Directions & Scale Drawings

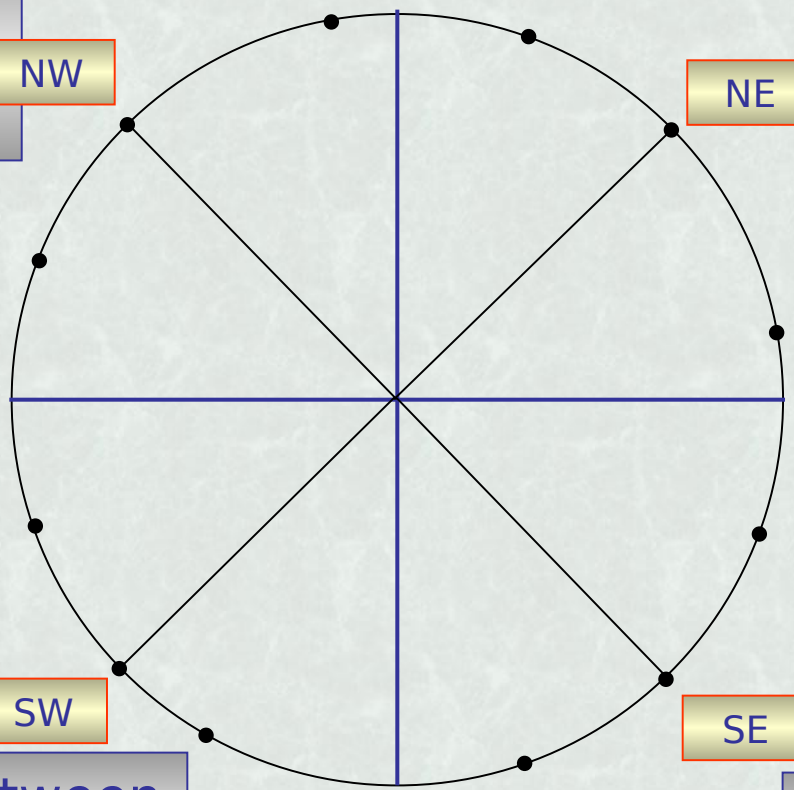
Learning Intention

1. To show how to write down directions using a map.
2. To explain how to construct a scale drawing using bearings.

Success Criteria

1. Be able to make sense of a map.
2. Write down accurate directions from a map.
3. Construct and interpret an accurate scale drawing.

Compass Points



Half way between North and West

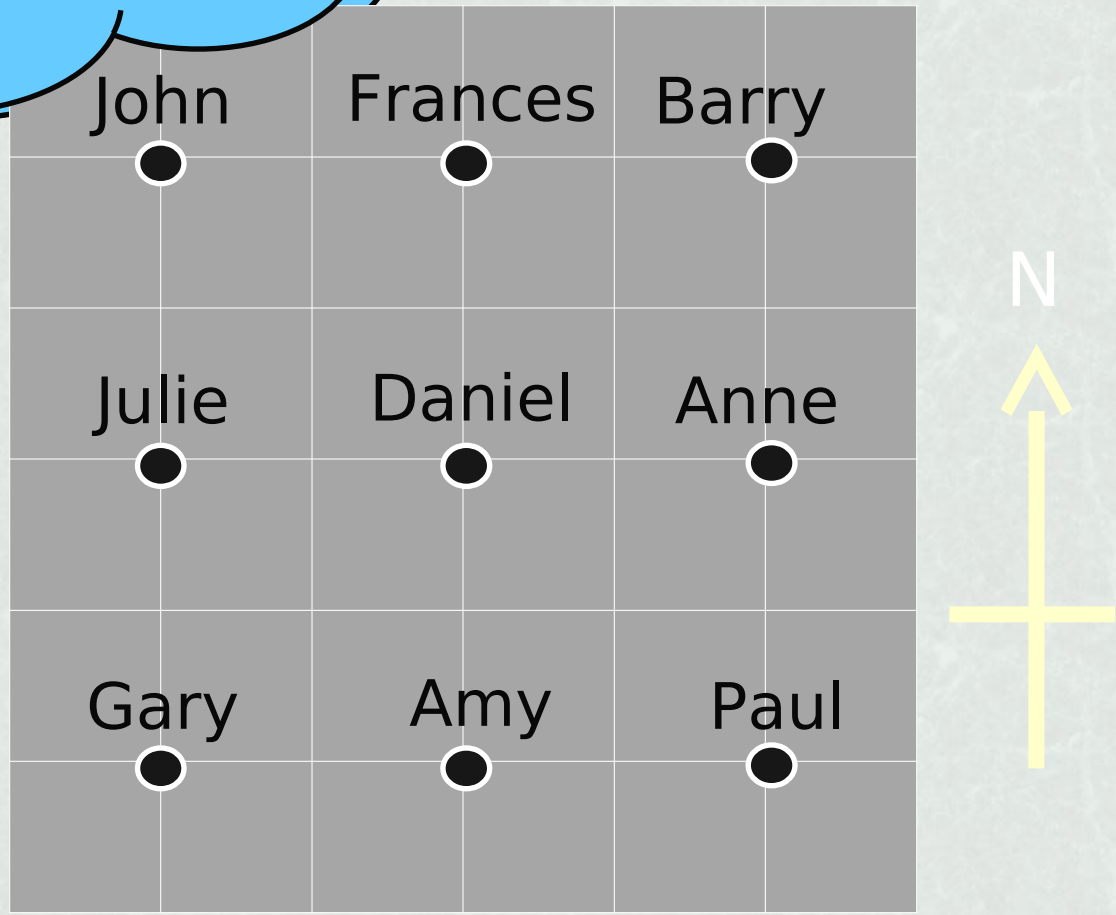
Half way between North and East

Half way between South and West

Half way between South and East

Points

If Gary walks to John then to Barry and then back to where he started. Write down all the directions he took.



Created by Mr. Lafferty Maths Dept.

I come out of the charity shop and need to catch a bus. Write down the directions to the bus station.



Scale Drawings & Bearings

Learning Intention

1. To understand how to work out a bearing. Practical uses for bearings.

Success Criteria

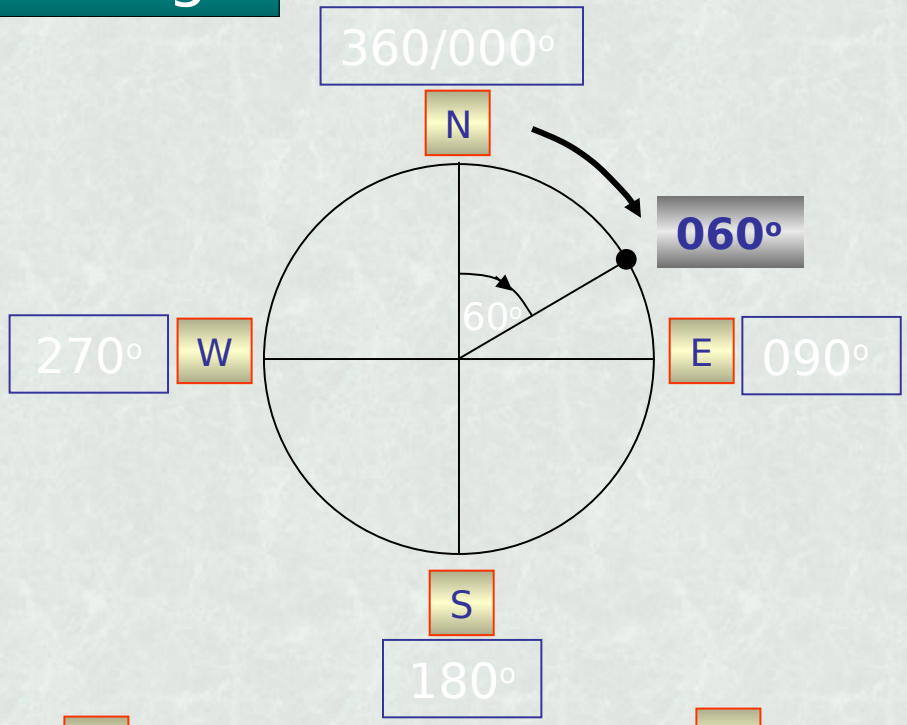
1. Work out a bearing.
2. Give a bearing in the correct format (three figure reference).

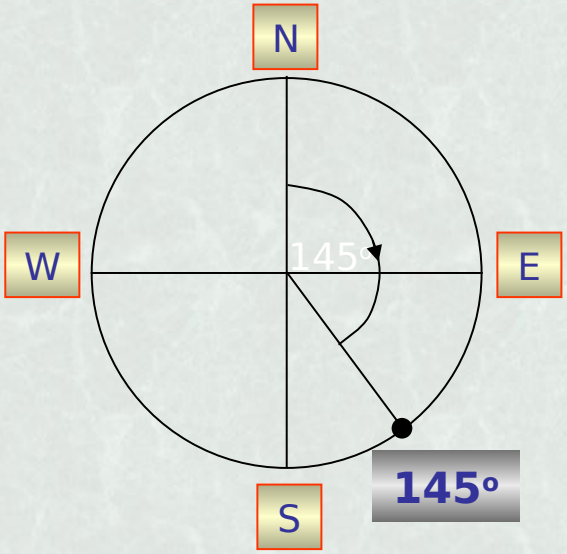
Bearings

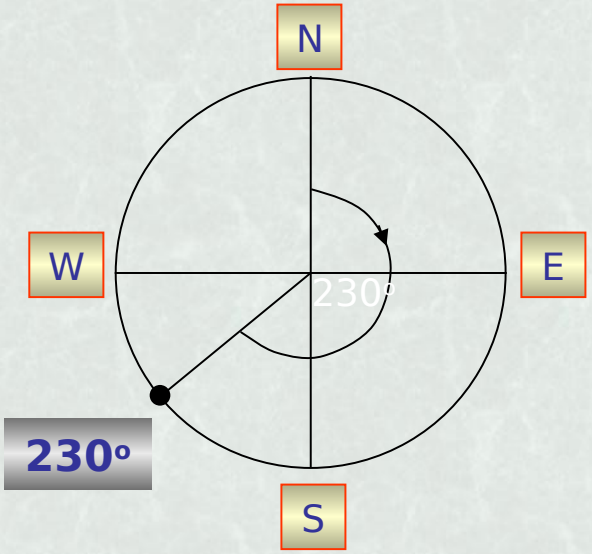
1. Measured from **North**.

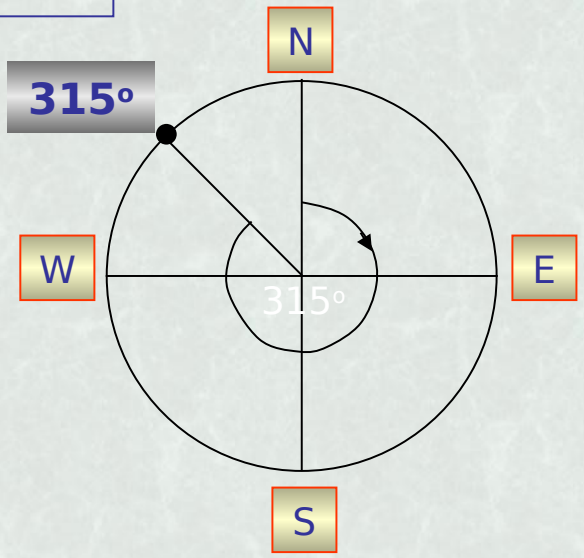
2. In a **clockwise** direction.

3. Written as **3 figures.**





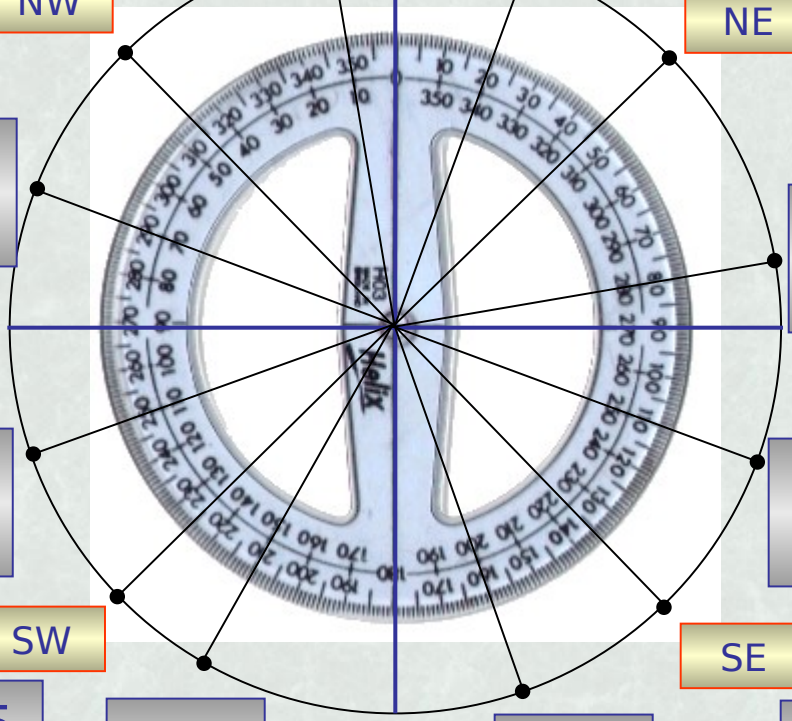




Bearings

A 360° protractor is used to measure bearin

Use your protractor to measure the bearing of each point from the centre of the circle.
(heet 1)



360/000°

350°

N

020°

315°

045°

NW

NE

290°

080°

270°

W

090°

250°

110°

SW

SE

225°

210°

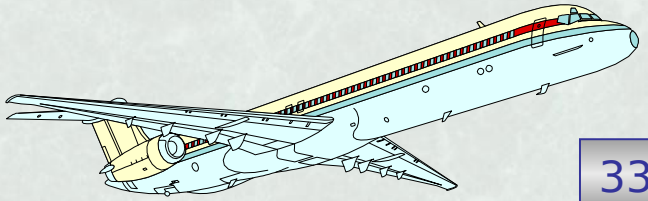
S

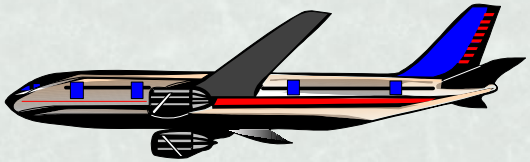
160°

135°

180°

Worksheet 1





N

360/000º

030º

045º

075º

090º E

110º

135º

170º

180º

S

200º

225º

250º

W 270º

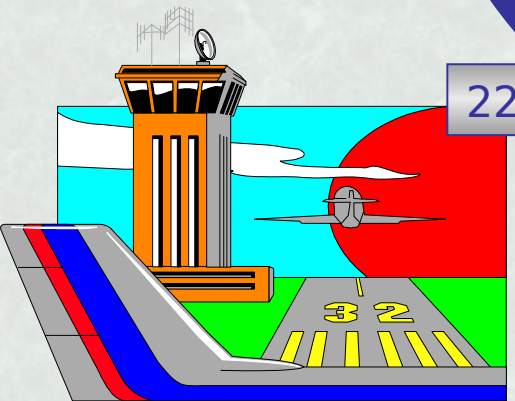
315º

290º

330º

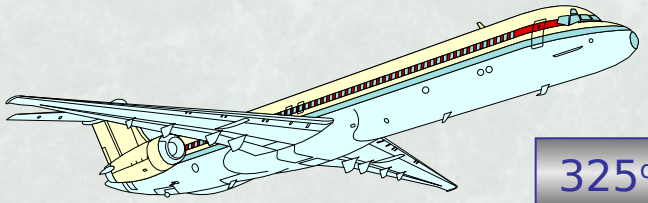
Estimate the bearing of each aircraft from the centre of the radar screen.

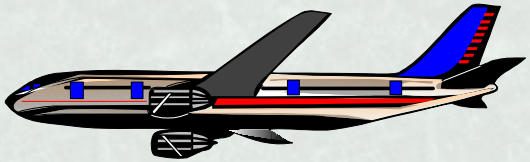
Control Tower



Air Traffic Controller







ACE Controller contest

Estimate the bearing of each aircraft from the centre of the radar screen.

N

360/000º

010º

040º

060º

090º E

120º

155º

180º S

195º

235º

250º

W 270º

280º

310º

325º

7

1

2

9

5

6

10

3

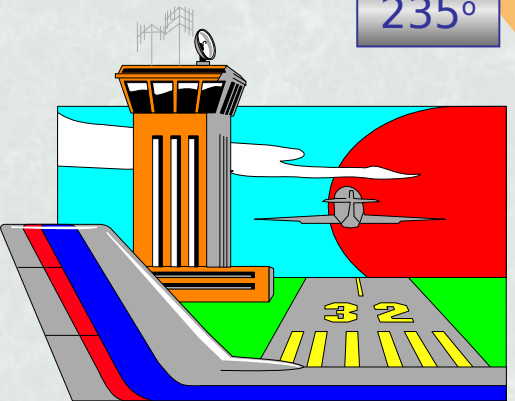
4

11

12

8

Control Tower



Air Traffic Controller

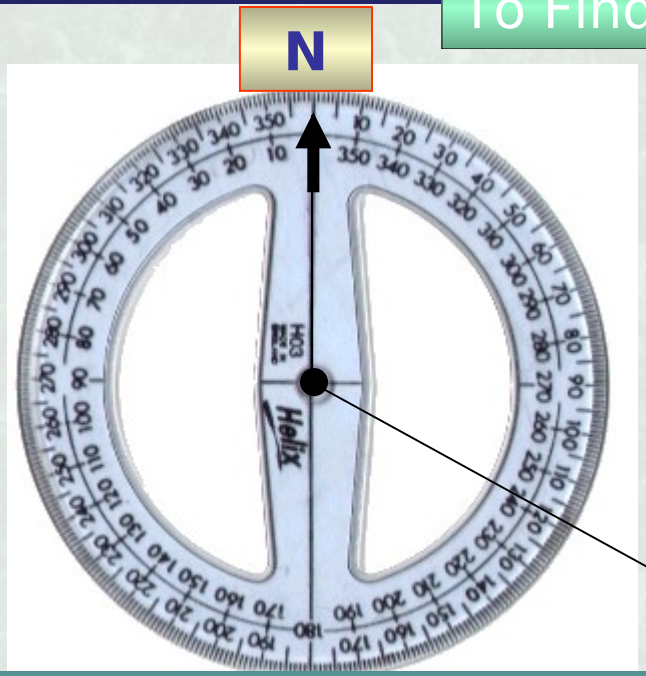


Worksheet 2

Bearings

Measuring the bearing of one point from another.

To Find the bearing of Q from P.



1. Draw a straight line between both points.

2. Draw a North line at P.

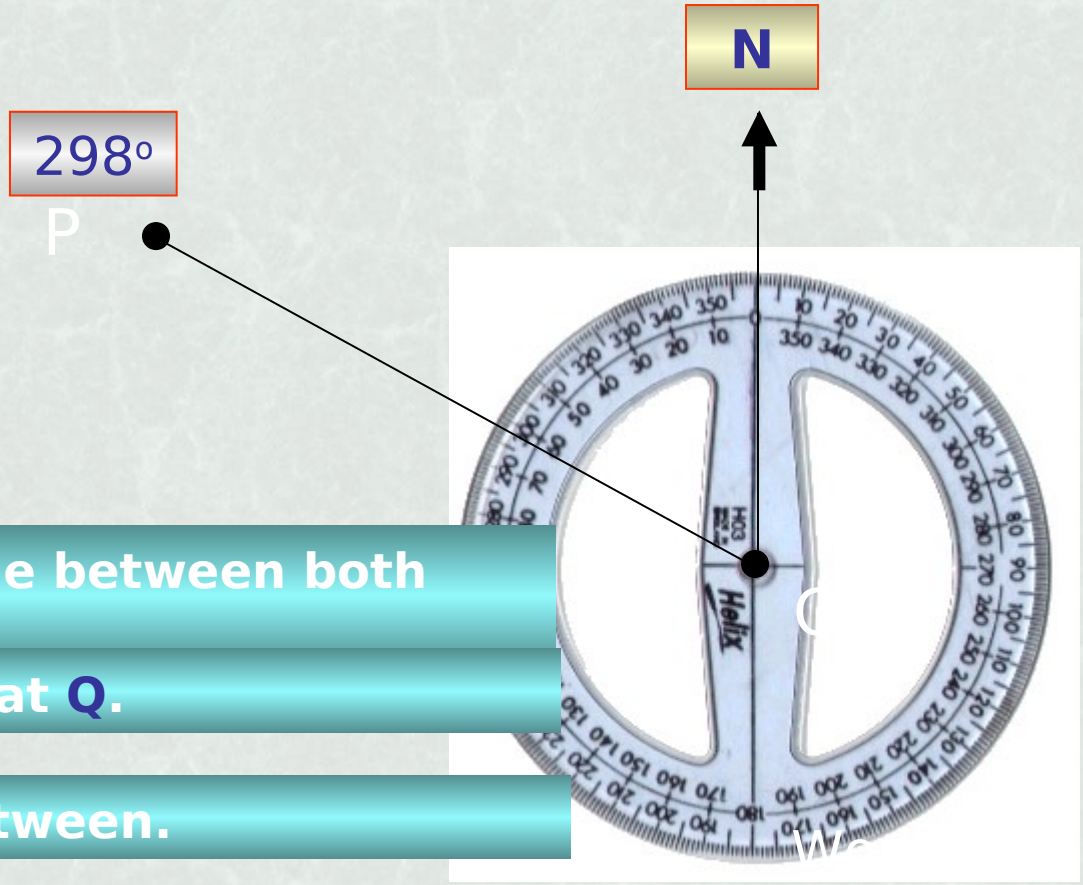
3. Measure angle between.

Worksheet 3

Bearings

Measuring the bearing of one point from another

To Find the bearing of P from Q.



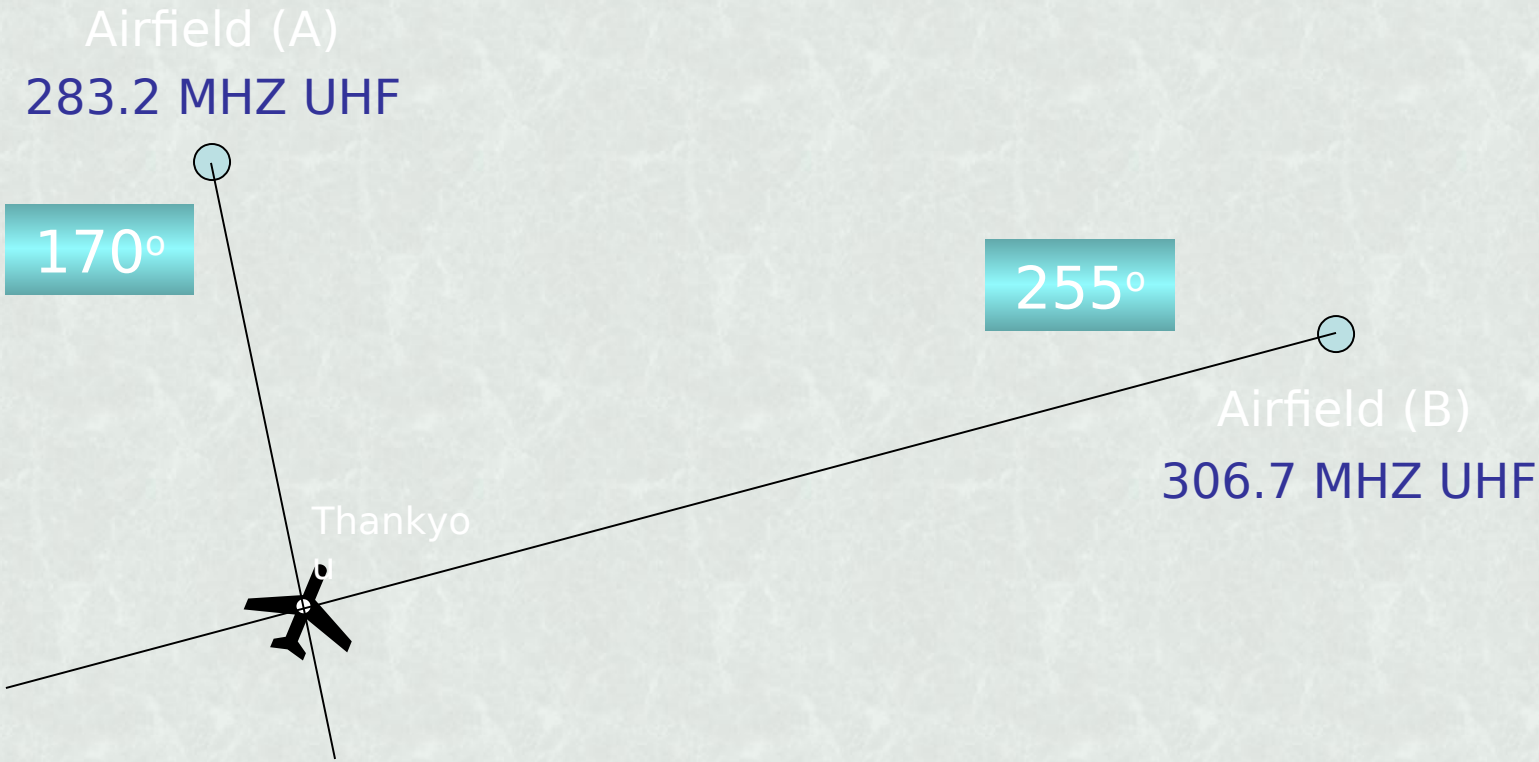
1. Draw a straight line between both points.

2. Draw a **North** line at **Q**.

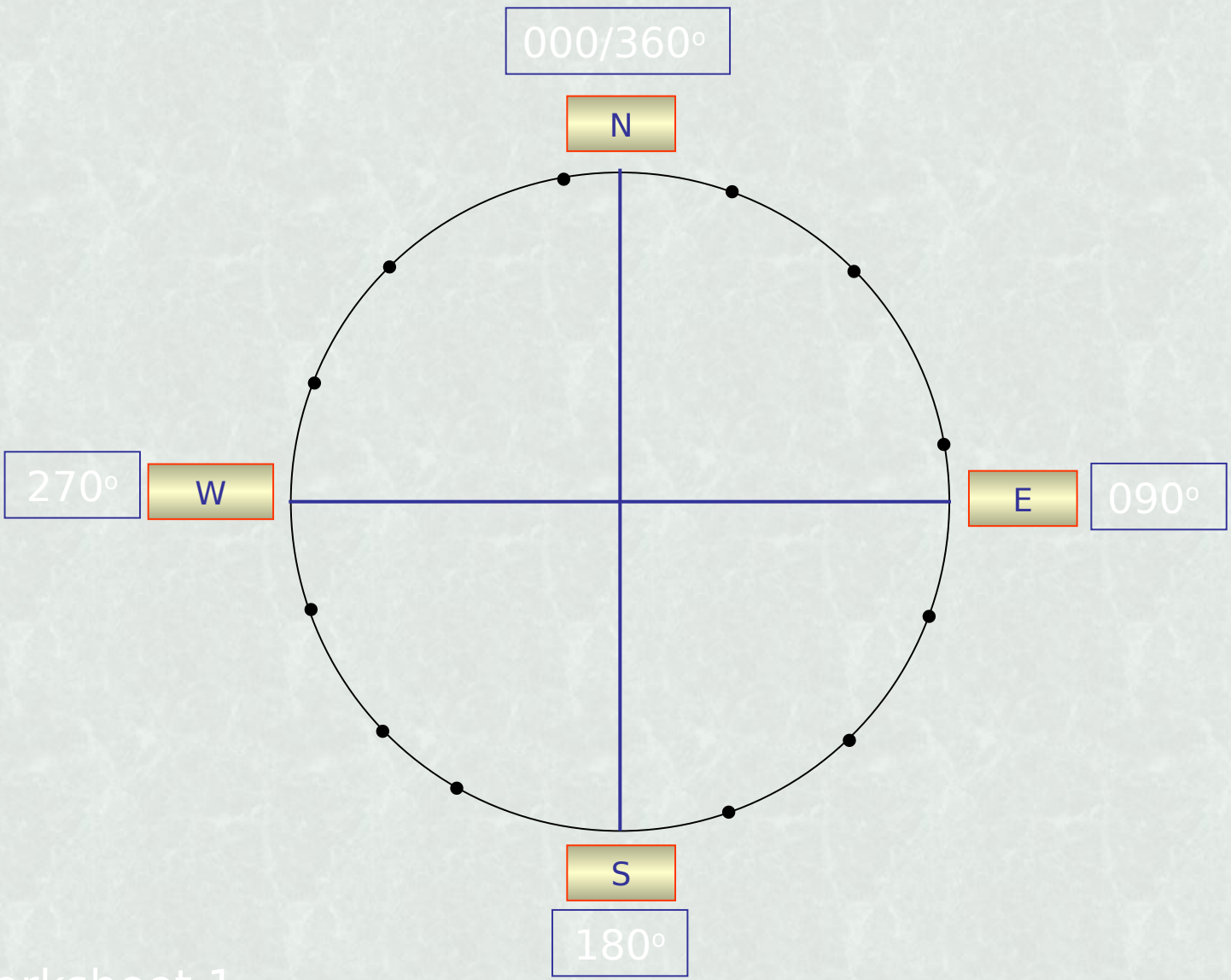
3. Measure angle between.

Bearings: Fixing Position

Trainee pilots have to to learn to be cope when the unexpected happens. If their navigation equipment fails they can quickly find their position by calling controllers at two different airfields for a bearing. The two bearings will tell the pilot where he is. The initial call on the controllers radio frequency will trigger a line on the radar screen showing the bearing of the calling aircraft.



Bearings



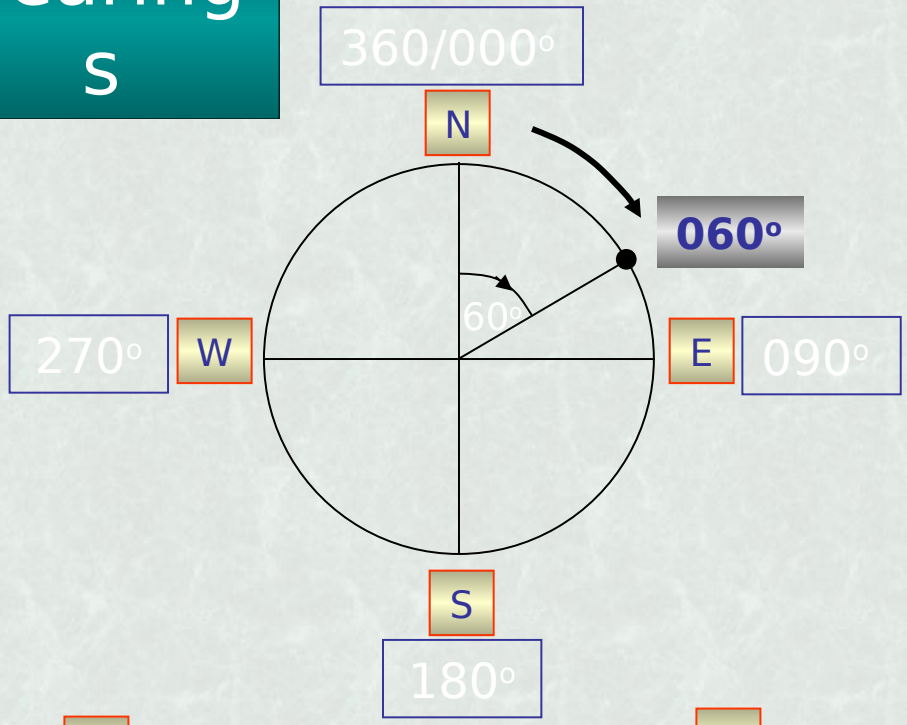
Worksheet 1

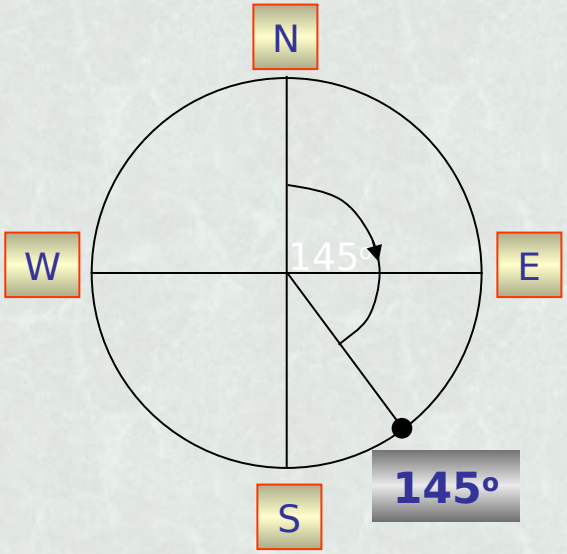
Bearings

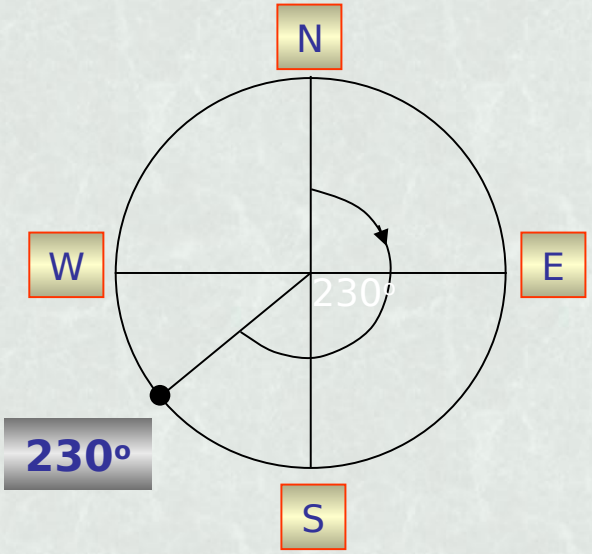
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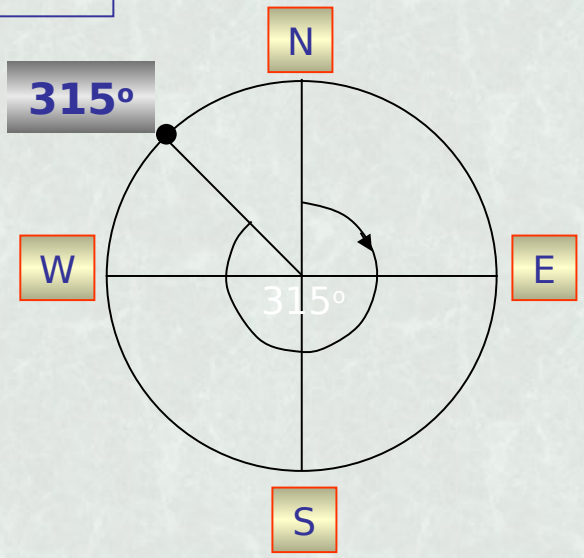
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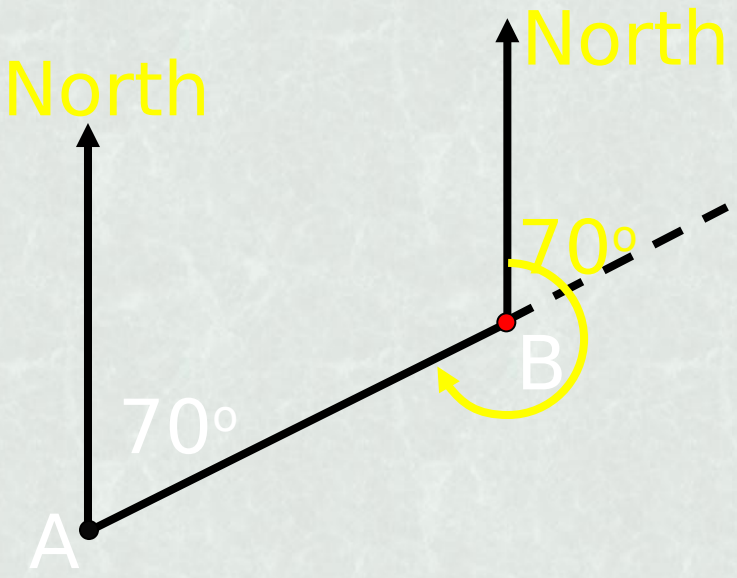


Scales & Drawing

Bearings

Example

The bearing from A to B is 70°.
What is the bearing from B to A.



Bearing from B to A is :

70° + 180°

= 250°

Scales & Drawing

Bearings

Example

The bearing from X to Y is 30°.
What is the bearing from Y to X.

Bearing
from Y to X is :

30° + 180°

= 210°

