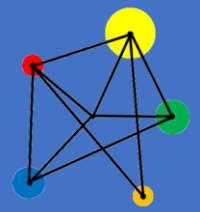
Bearings



Understand and use bearings.

Vocabulary

Angle
A measure of turn. Usually measured in degrees.

Bearing
An angle measured in degrees clockwise from North.

Clockwise
Describes turning in the same direction as the hands on a clock.

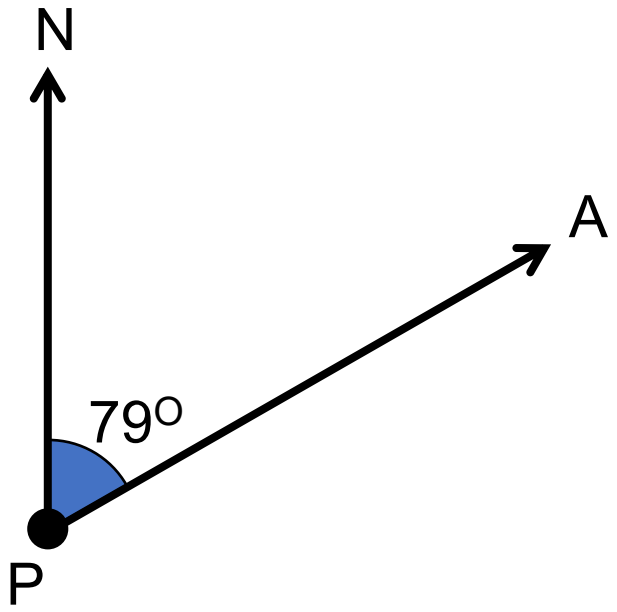
The opposite direction is called anti-clockwise.

Key fact

Bearings are angles.

They are always measured starting from North in a clockwise direction.

They are given as 3 figures so 79° would be written as 079°

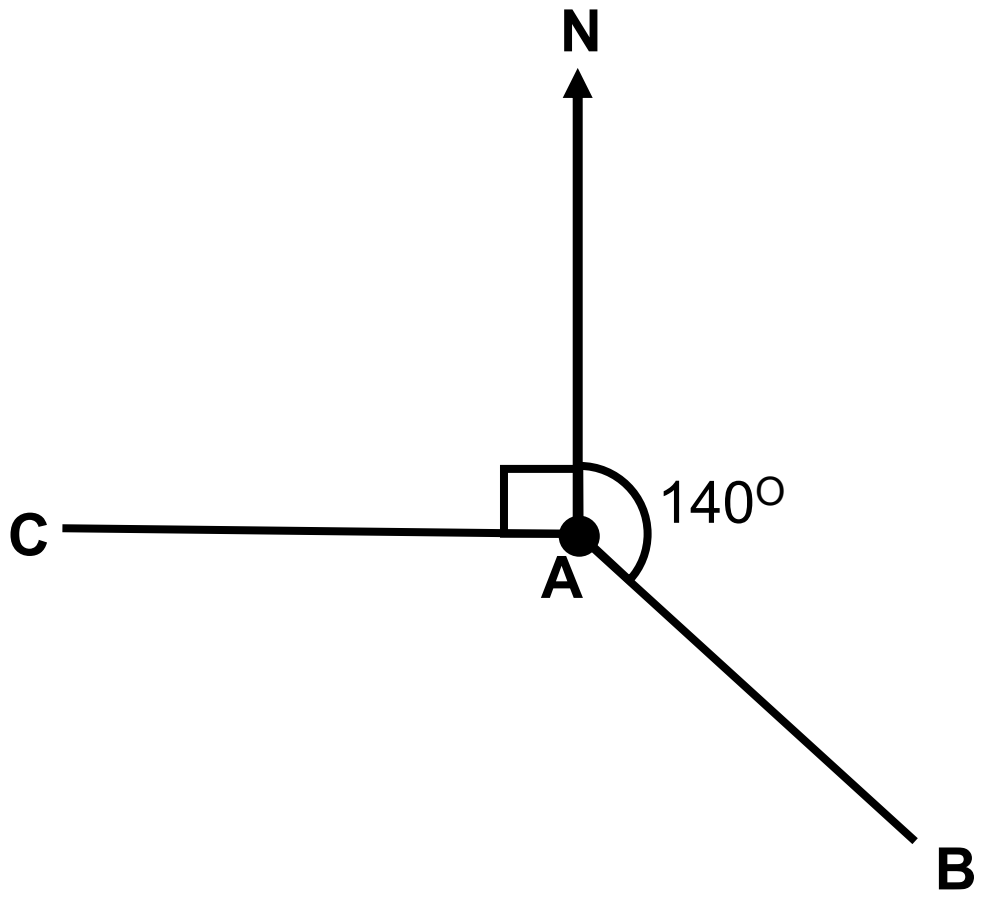


The bearing of A from P is 079°

Example

What is the bearing of B from A?

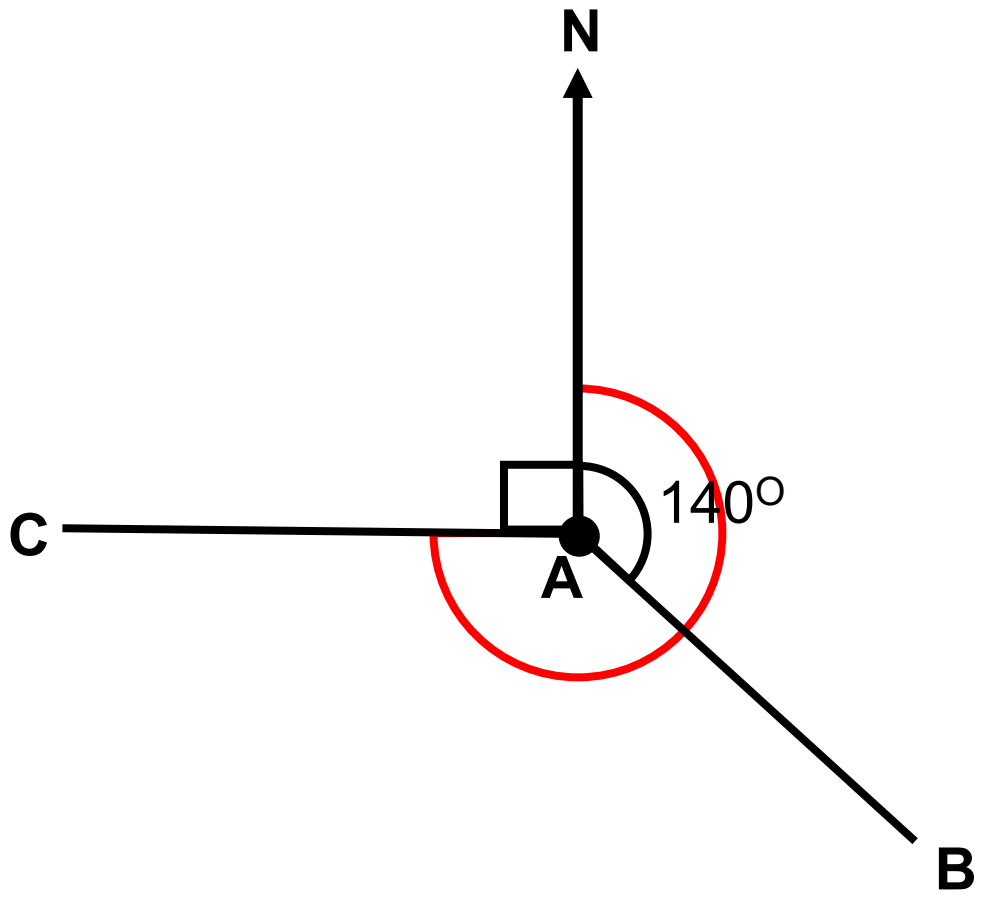
What is the bearing of C from A?



Solution

What is the bearing of B from A?
The bearing of B from A is **140°**

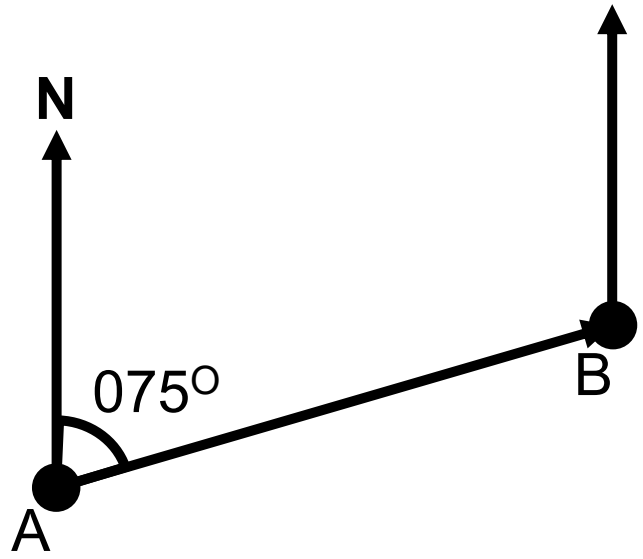
What is the bearing of C from A?
The bearing of C from A is **270°**



Question

The bearing of B from A is 075^{o}

What is the bearing of A from B?

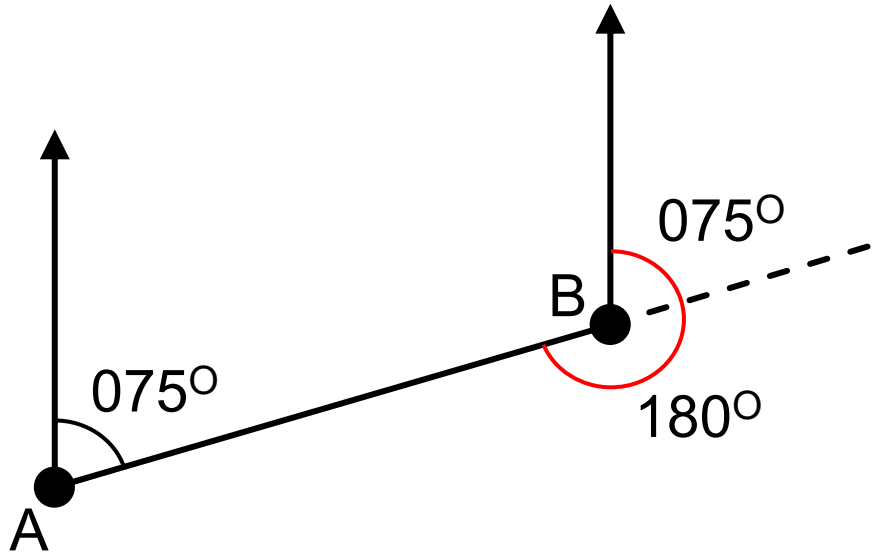


Solution

The bearing of B from A is 075°

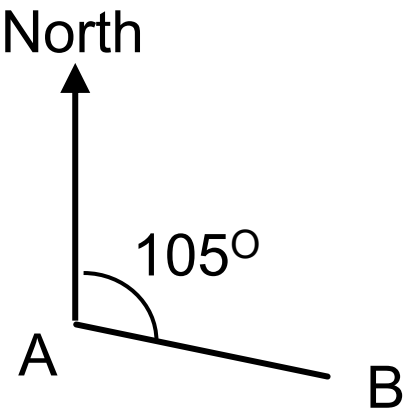
What is the bearing of A from B?

255°

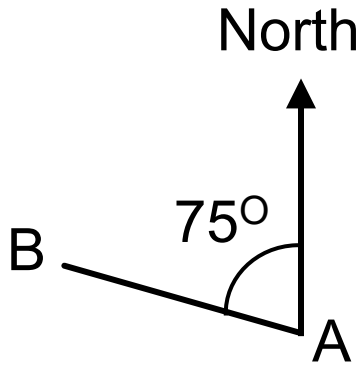


1. Write down the bearing of B from A.

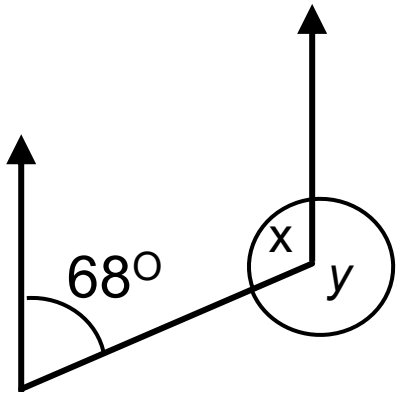
a)



b)



2. Find the size of angles x and y.



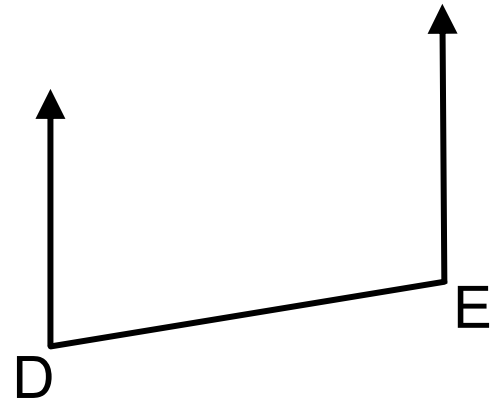
3. The bearing of Gatwick Airport from Leeds Airport is 160°

What is the bearing of Leeds Airport from Gatwick Airport ?

4. Aeroplane F is on a bearing of 040° from aeroplane D.

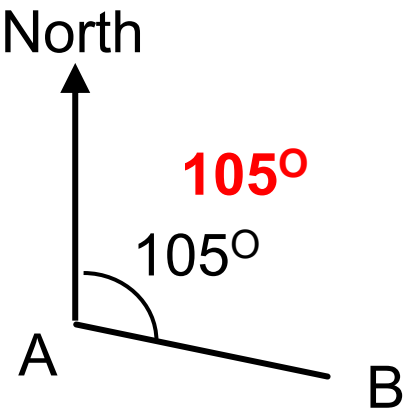
Aeroplane F is on a bearing of 300° from aeroplane E.

Mark the position of aeroplane F on the diagram.

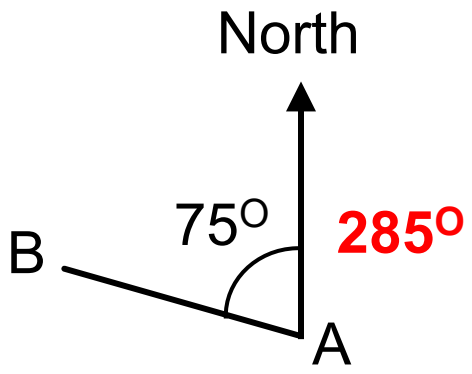


1. Write down the bearing of B from A.

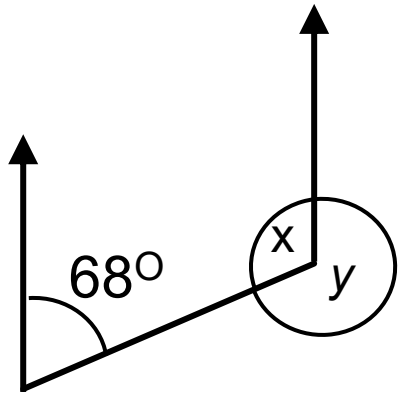
a)



b)



2. Find the size of angles x and y.



x = 112°

y = 248°

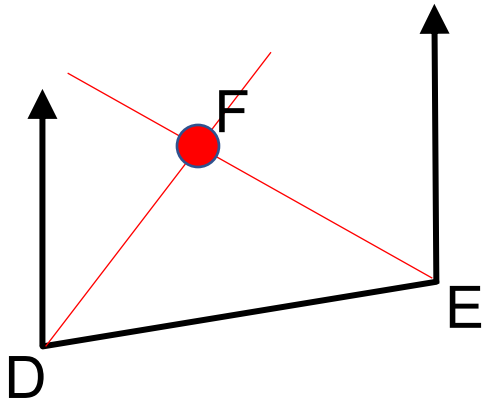
3. The bearing of Gatwick Airport from Leeds Airport is 160°

What is the bearing of Leeds Airport from Gatwick Airport ? **340°**

4. Aeroplane F is on a bearing of 040° from aeroplane D.

Aeroplane F is on a bearing of 300° from aeroplane E.

Mark the position of aeroplane F on the diagram.



Bearings & Scale Drawings

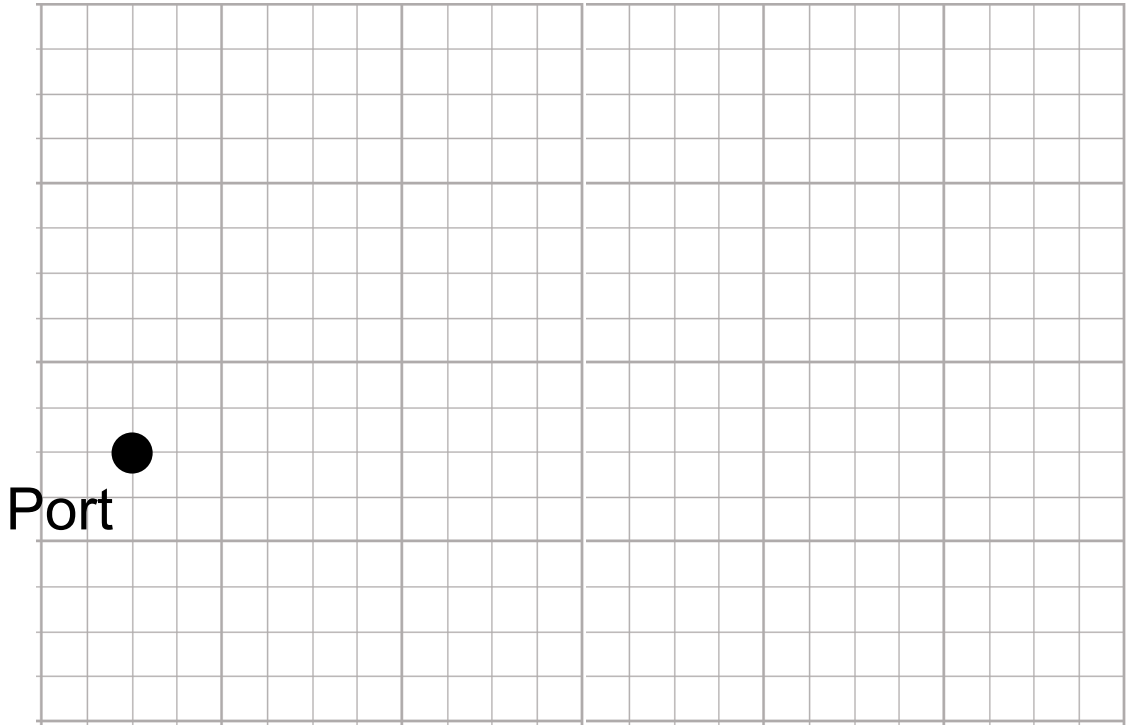
A ship leaves port and sails 25km on a bearing of 060°.

It then changes direction and sails for 35km on a bearing of 140°.

Make an accurate scale drawing.
Use a scale of 1cm = 5km.

How far is the ship from port?

On what bearing should the ship sail in order to return to port.



Solution

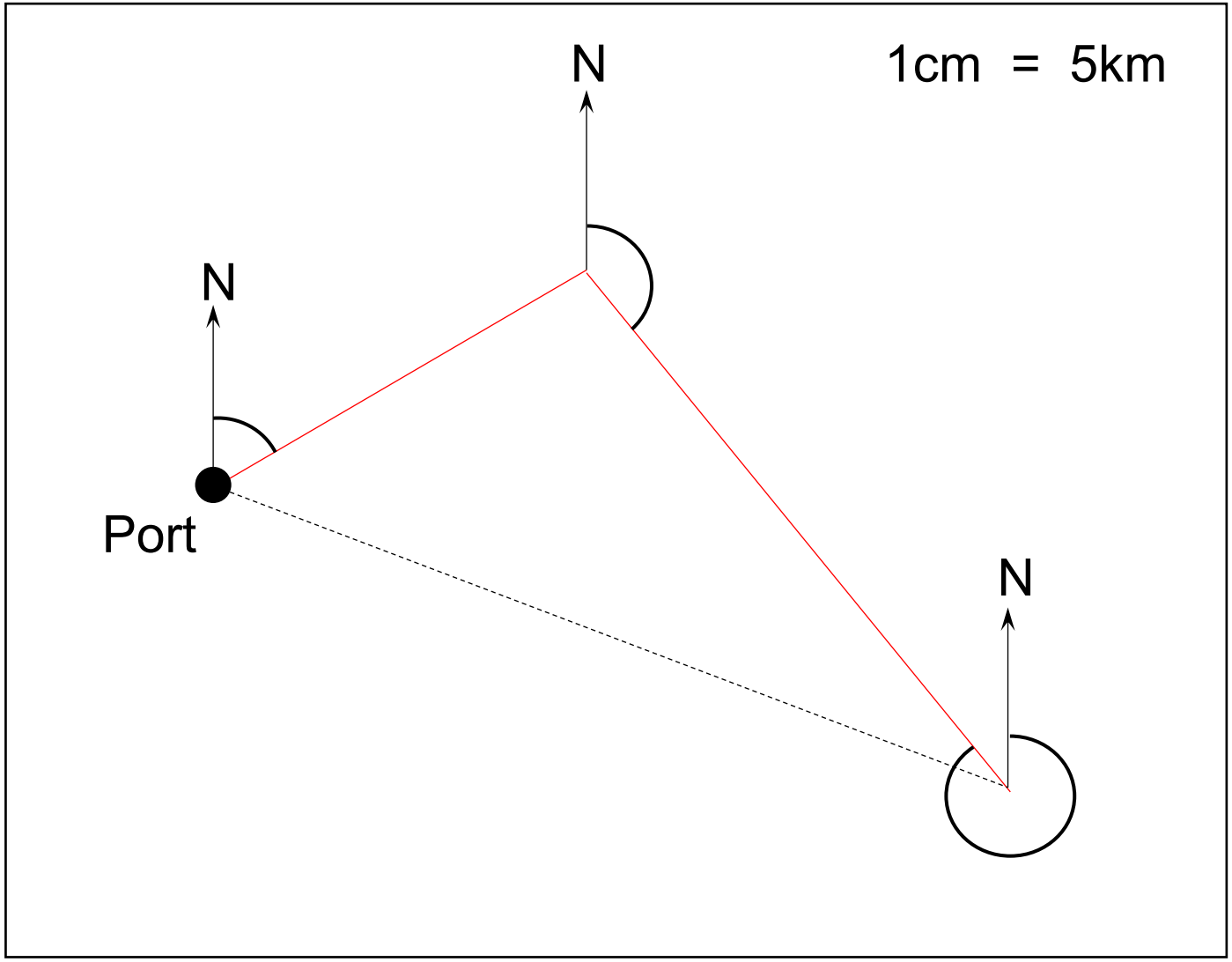
A ship leaves port and sails 25km on a bearing of 060°.

It then changes direction and sails for 35km on a bearing of 140°.

Make an accurate scale drawing.
Use a scale of 1cm = 5km.

How far is the ship from port?
47.5 km

On what bearing should the ship sail in order to return to port.
288°



A plane leaves the airport and flies 400km on a bearing of 090°.

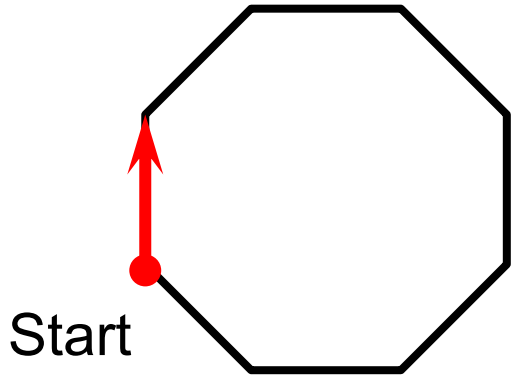
It then changes direction and flies for 250km on a bearing of 240°.

Make an accurate scale drawing.
Use a scale of 1cm = 50km.

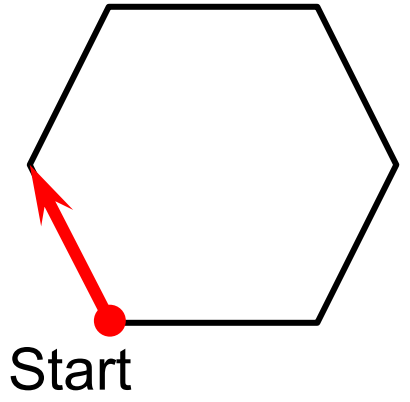
How far is the plane from the airport?

On what bearing should the plane fly in order to return to port.

If you want to walk in a perfect regular octagon as shown, what bearings should you follow?



How about a regular hexagon?



A plane leaves the airport and flies 400km on a bearing of 090°.

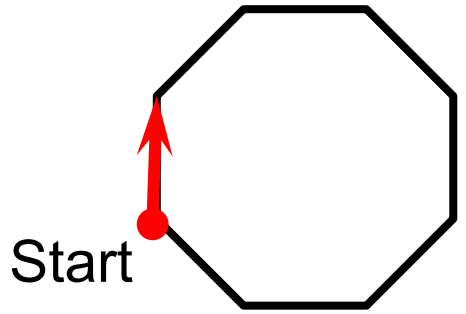
It then changes direction and flies for 250km on a bearing of 240°.

Make an accurate scale drawing.
Use a scale of 1cm = 50km.

How far is the ship from port? **215 km**

On what bearing should the ship sail in order to return to port. **310°**

If you want to sail in a perfect regular octagon as shown, what bearings should you follow?



000°

045°

090°

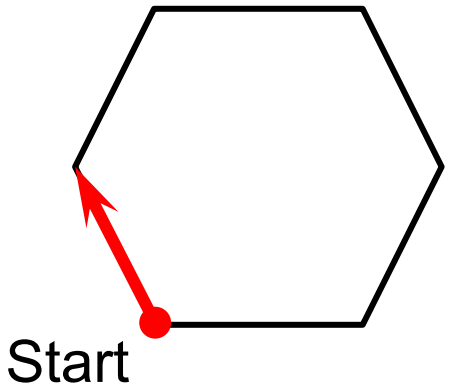
135°

180°

225°

270°

How about a regular hexagon?



300°

030°

090°

150°

210°

270°

Questions

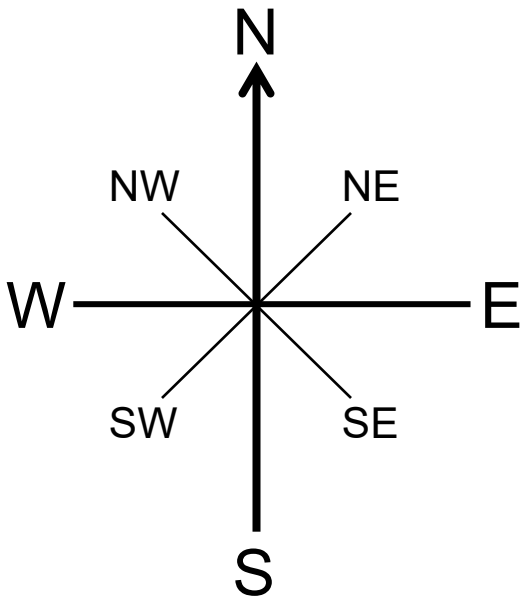
What bearing are you travelling on if you are travelling:

a) South

a) West

b) Northeast

c) Northwest



Solutions

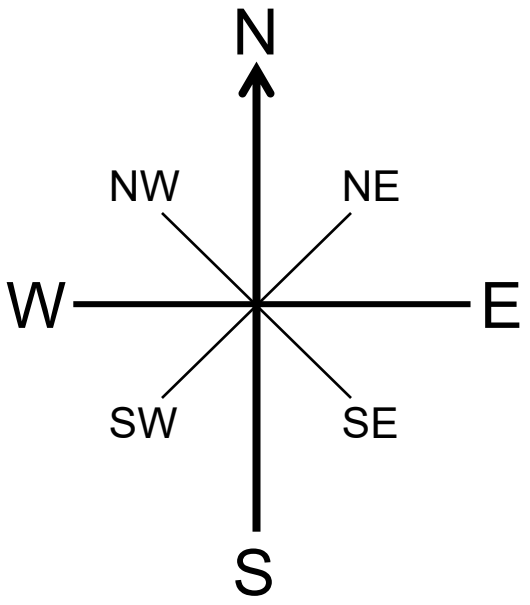
What bearing are you travelling on if you are travelling:

a) South **180°**

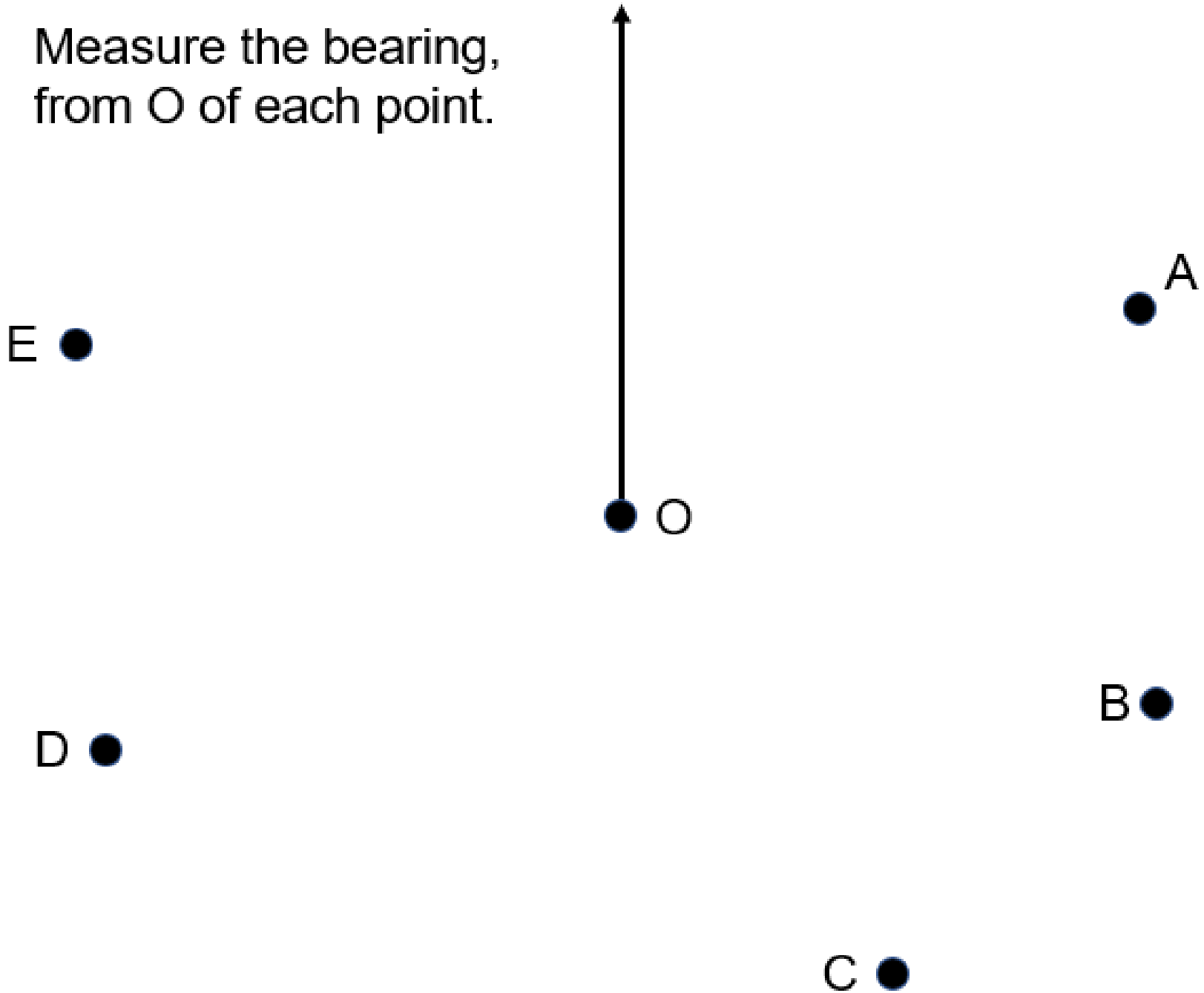
a) West **270°**

b) Northeast **045°**

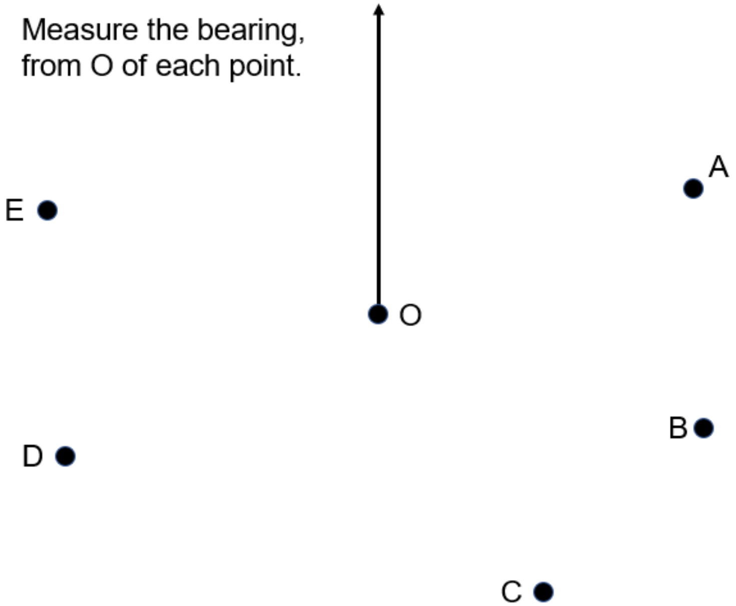
c) Northwest **315°**



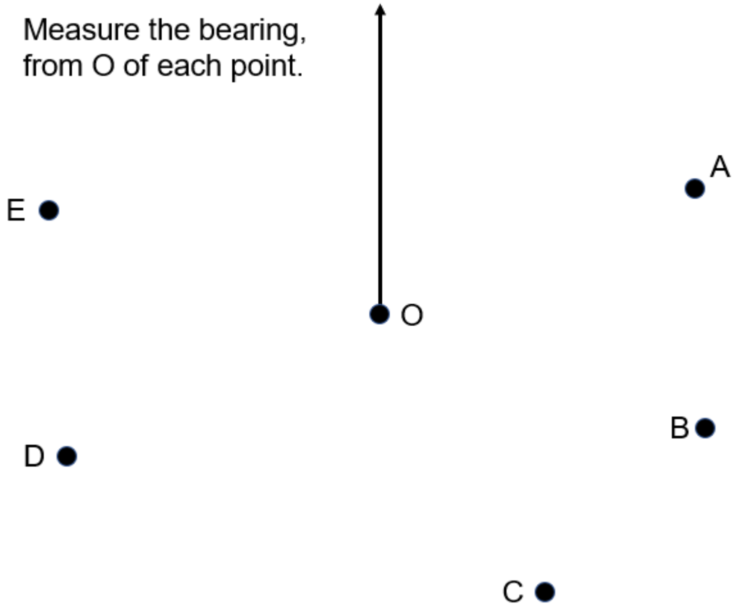
Measure the bearing,
from O of each point.



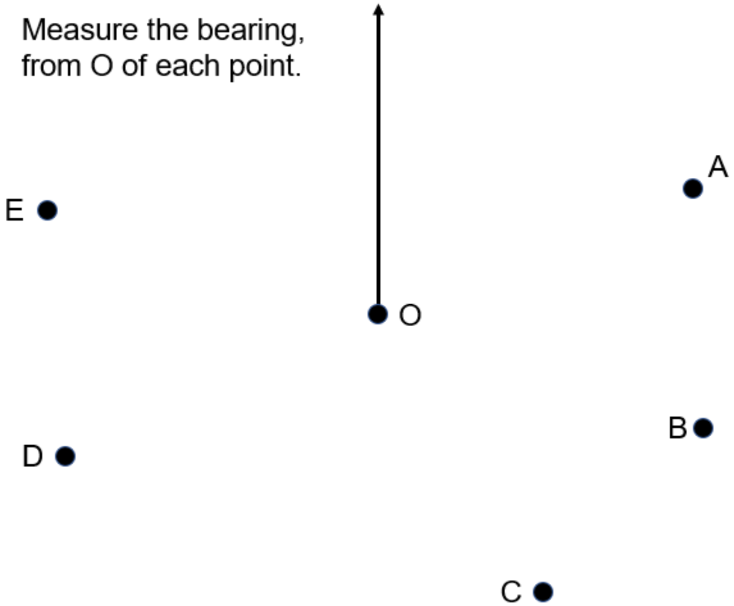
Measure the bearing, from O of each point.



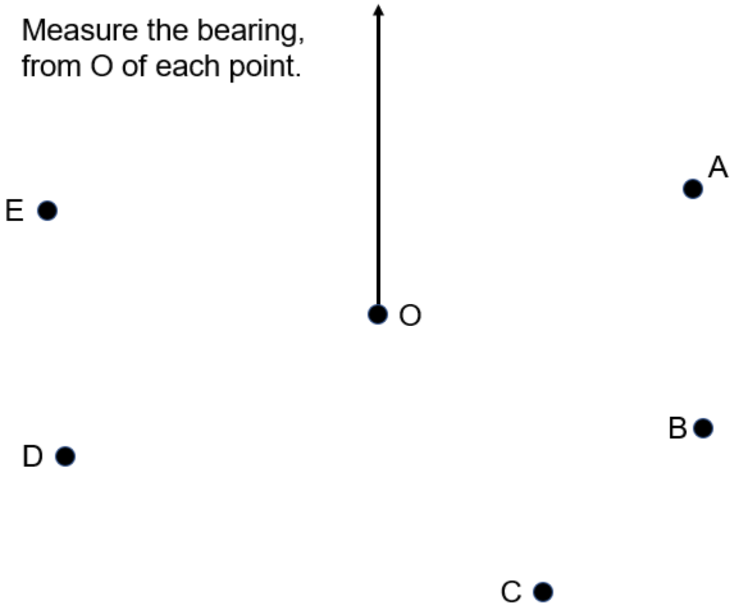
Measure the bearing, from O of each point.



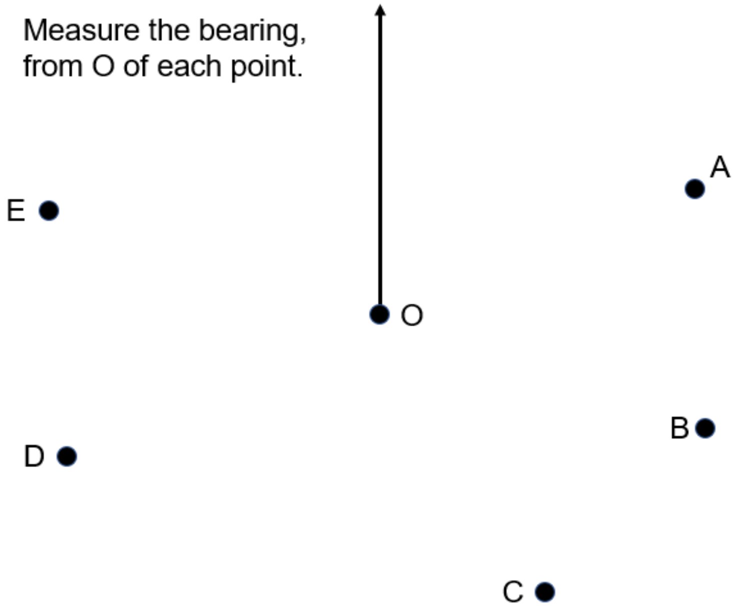
Measure the bearing, from O of each point.



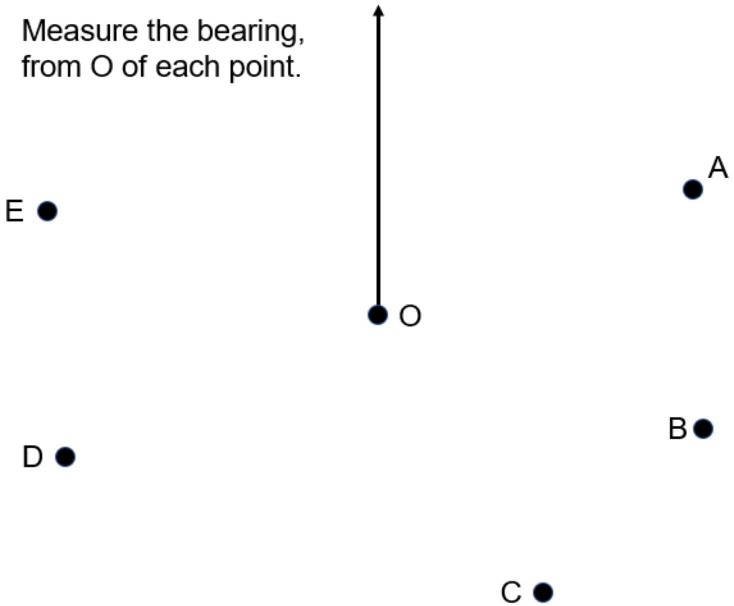
Measure the bearing, from O of each point.



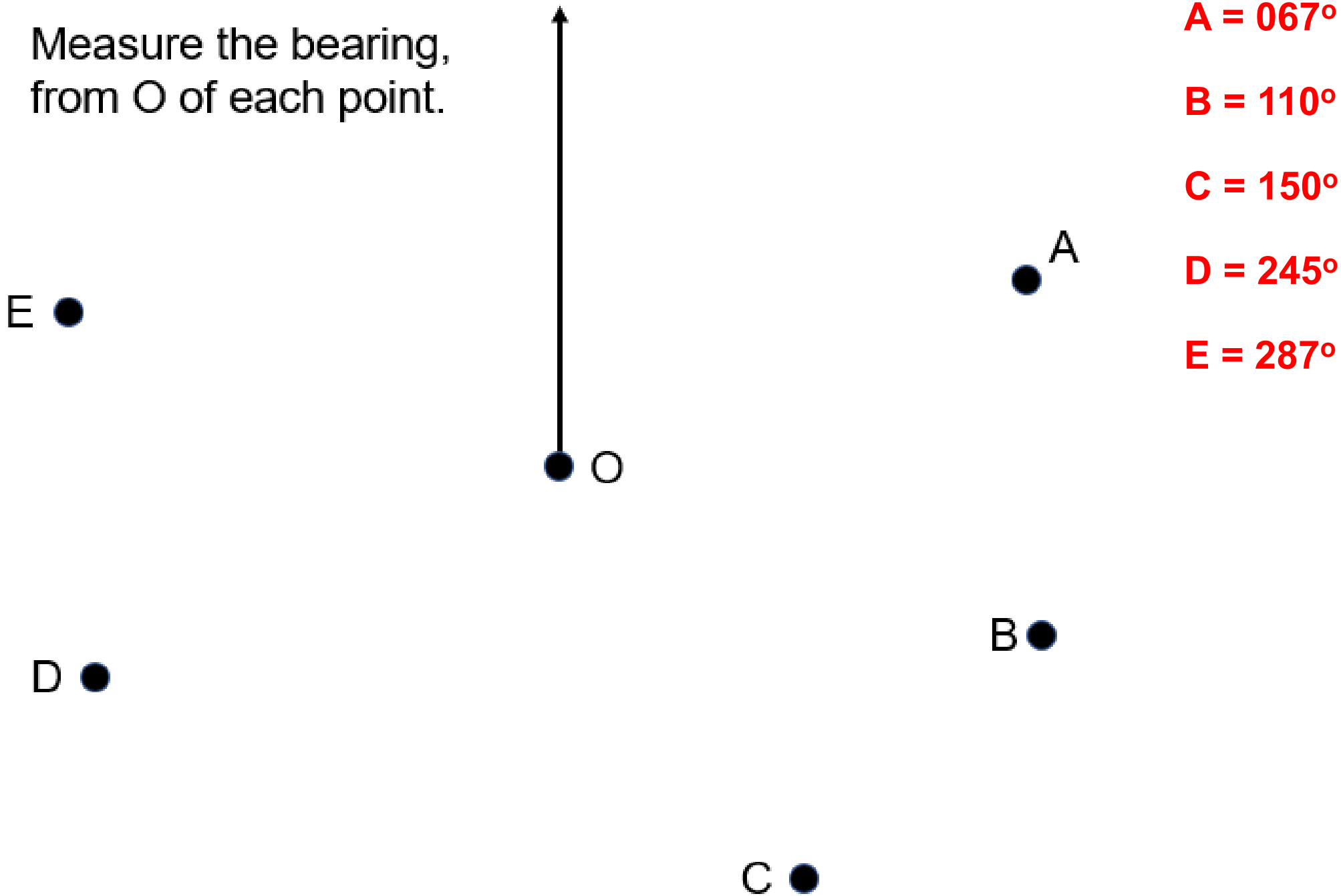
Measure the bearing, from O of each point.



Measure the bearing, from O of each point.



Measure the bearing, from O of each point.



A = 067°

B = 110°

C = 150°

D = 245°

E = 287°

Extension

Using bearings, describe a journey of three parts that would be in the shape of an equilateral triangle with sides 6cm long.

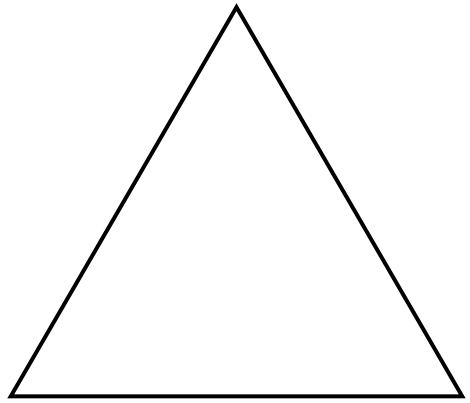
Solution

Using bearings, describe a journey of three parts that would be in the shape of an equilateral triangle with sides 6cm long.

Travel 6cm on a bearing of 030^{o}.

Travel 6cm on a bearing of 150^{o}.

Travel 6cm on a bearing of 270^{o}.



Exam Style Questions

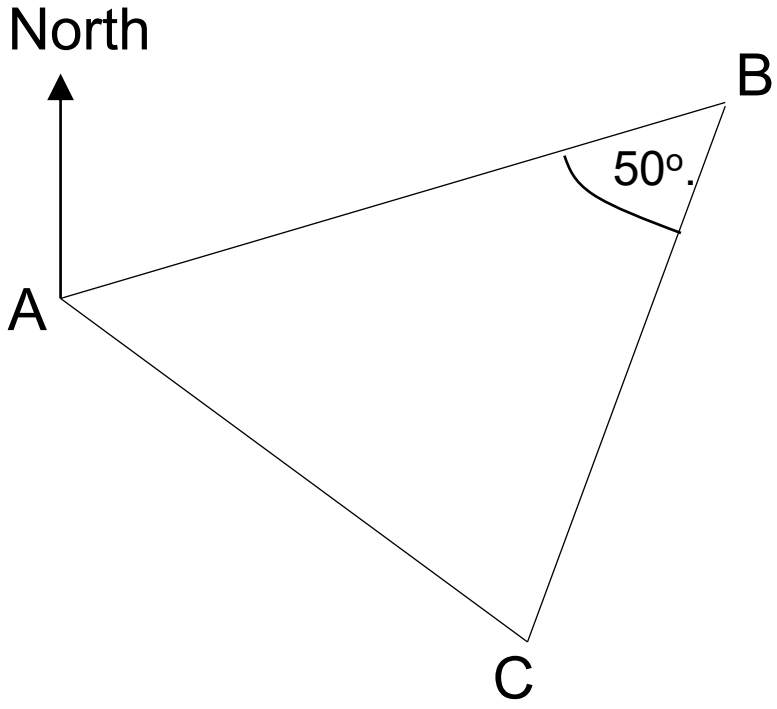
The diagram shows the position of three points, D, E and F, on a map.

The bearing of B from A is 080°.

Angle ABC = 50°.

AB = AC.

Work out the bearing of C from A.



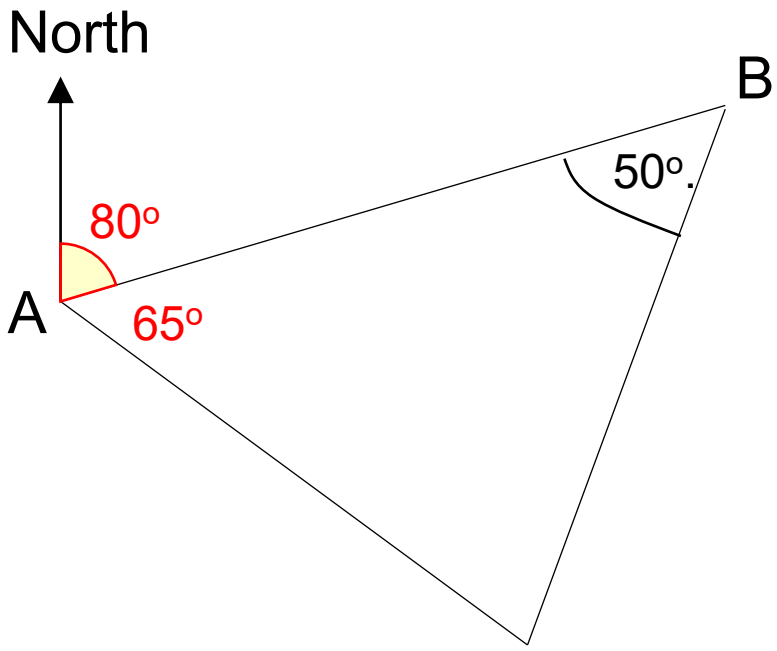
Solution

The diagram shows the position of three points, D, E and F, on a map.

The bearing of B from A is 080°.

Angle ABC = 50°.

AB = AC.



Work out the bearing of C from A.

Angle BAC = 65° – angles in an isosceles triangle

The bearing of C from A = 80° + 65° = 145°