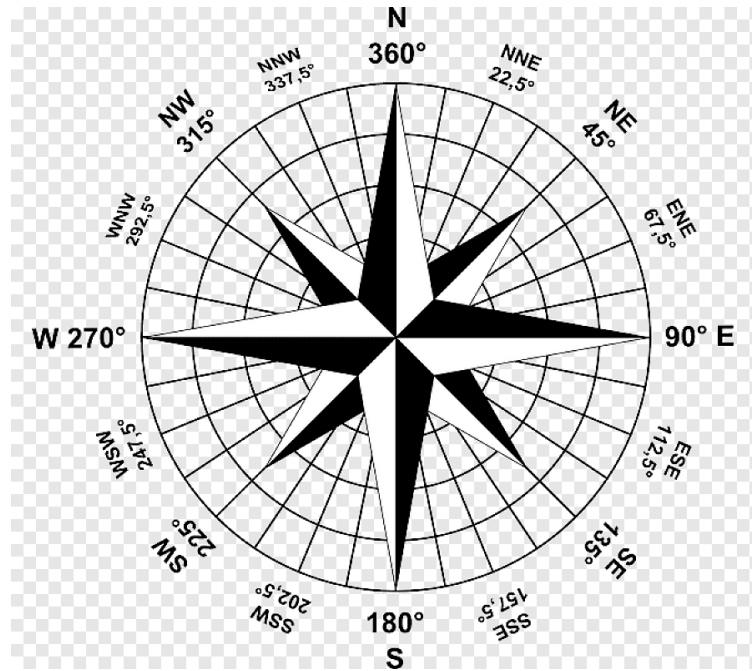


WALT read compass bearings

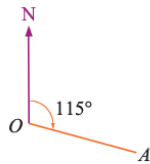
Success Criteria I know the directions and understand that the full rotation is 360°



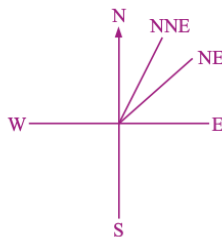
[Video](#)

Plotting a course for a ship or an aircraft requires accurate directions. These directions are usually given in the form of bearings. The agreed convention is that the direction of travel is measured by a clockwise rotation from the true north direction. The bearing of A from O is the measure of the angle between the line OA and the line through O in the true north direction. The angles are always written using three digits.

This angle is the bearing of A from O . It is written as 115°T .



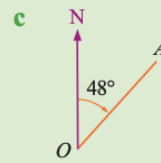
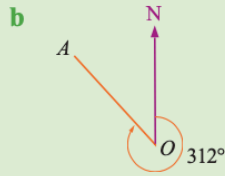
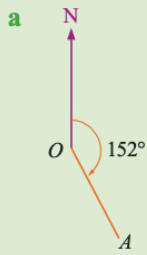
Bearings are sometimes given using the compass rose. In this case the bearings are given with respect to north, south, east and west. For example, NNE is shown.



[Video 2](#)

EXAMPLE 1

Write the bearing of A from O as shown in each diagram.

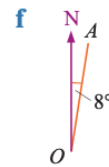
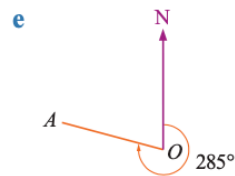
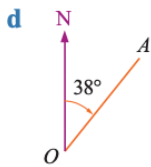
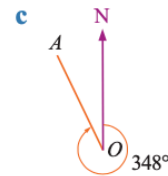
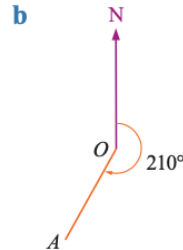
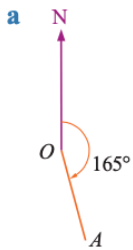


	Solve	Think	Apply
a	The bearing is 152°T .	Clockwise 152° .	There must be three digits in the bearing. The bearing is the clockwise turning from north.
b	The bearing is 312°T .	Clockwise 312° .	
c	The bearing is 048°T .	Clockwise 048° .	

Video 3

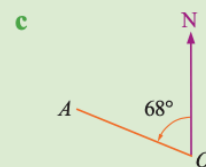
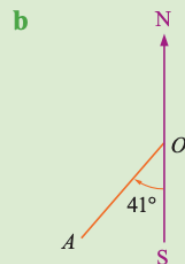
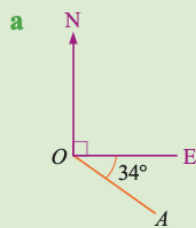
[Video on How to calculate distance using bearings and Trigonometry](#)

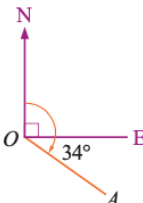
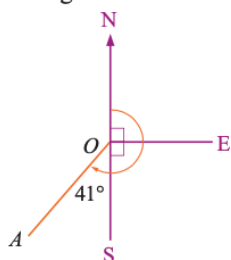
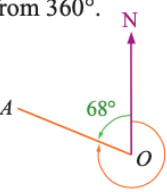
1 Write the bearings of A from O for each of the following.



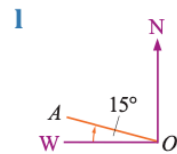
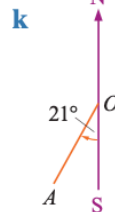
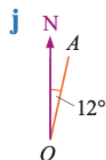
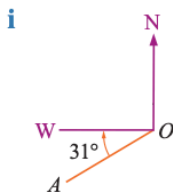
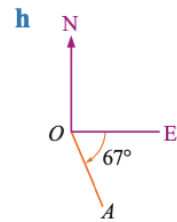
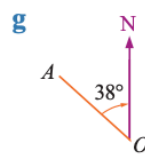
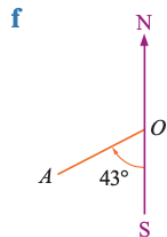
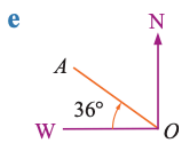
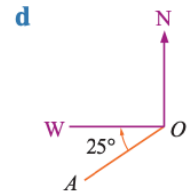
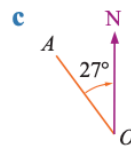
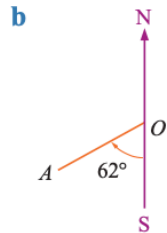
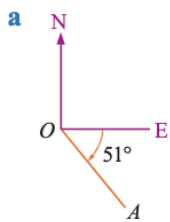
EXAMPLE 2

Write the bearing of A from O .



	Solve	Think	Apply
a	Bearing is $90^\circ + 34^\circ = 124^\circ\text{T}$.	The angle NOE is 90° . 	The angle from north in a clockwise direction must be found for the bearing. Add or subtract as required. Bearings will never be greater than 360° .
b	Bearing is $180^\circ + 41^\circ = 221^\circ\text{T}$.	The angle NOS is 180° . 	
c	The bearing is $360^\circ - 68^\circ = 292^\circ\text{T}$.	68° is anticlockwise, so subtract from 360° . 	

2 Write the bearing of A from O shown below.



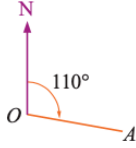
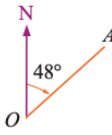
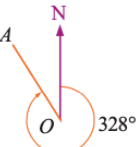
EXAMPLE 3

Draw a diagram to represent the position of A from O for each of the following compass bearings.

a 110°T

b 048°T

c 328°T

	Solve	Think	Apply
a		Clockwise 110° from north.	Always turn in a clockwise direction from north.
b		Clockwise 48° from north.	
c		Clockwise 328° from north.	

3 Draw a diagram to represent the position of A from O for each of these compass bearings.

a 128°T

b 022°T

c 312°T

d 231°T

e 005°T

f 285°T

g 185°T

h 300°T

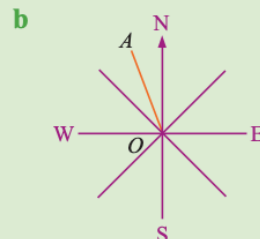
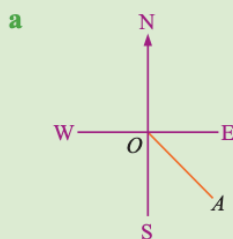
i 073°T

j 355°T

k 133°T

l 099°T

EXAMPLE 4



i Write the compass bearing shown in each diagram.

ii Find $\angle NOA$.

iii Write as a true bearing.

	Solve	Think	Apply
a i	The bearing is SE.	OA is in the middle of south and east.	Each of the main compass points is 90° . The bearing divides the angle into two angles of 45° .
ii	$\begin{aligned}\angle NOA &= 90^\circ + 45^\circ \\ &= 135^\circ\end{aligned}$	East is 90° from north.	
iii	135°T	The angle from north.	

	Solve	Think	Apply
b i	The bearing is NNW.	AO is between NW and N.	The angle between these dividers is 22.5° .
ii	$\angle NOA = 90^\circ + 90^\circ + 90^\circ + 45^\circ + 22.5^\circ$ $= 337.5^\circ$	A is close to north, so the bearing is close to 360° .	
iii	337.5°T	The angle from north.	

4 Here is a compass rose.

a Find the angle between:

i N and E

iii W and NW

v SW and WSW

b Write each of these compass bearings as true bearings.

i NNE

iii SE

v SSW

vii WNW

ii S and SW

iv E and ESE

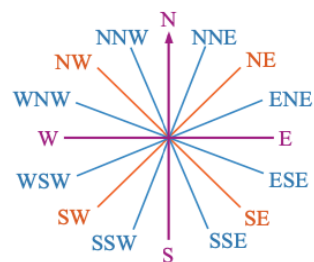
vi W and NNW

ii ENE

iv SSE

vi WSW

viii NW



Always put the north or south part of the bearing first. **!**

Check your answers

1 a 165°T

d 038°T

2 a 141°T

d 245°T

b 210°T

e 285°T

b 242°T

e 306°T

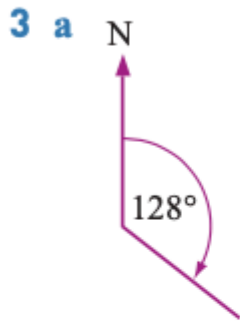
c 348°T

f 008°T

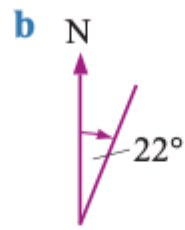
c 333°T

f 223°T

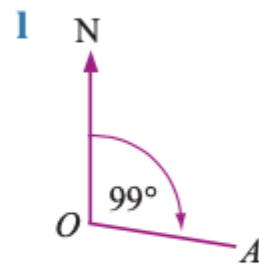
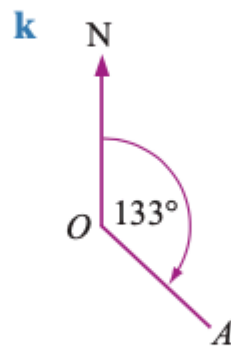
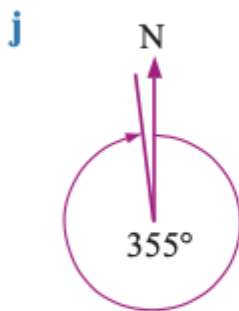
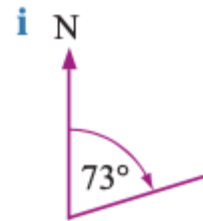
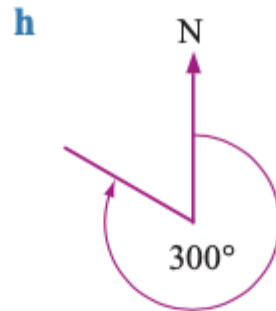
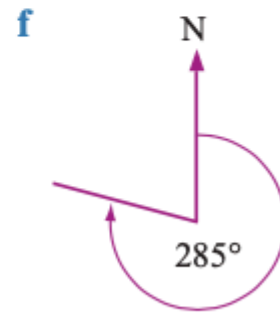
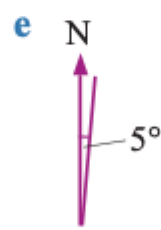
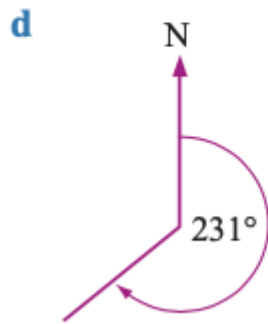
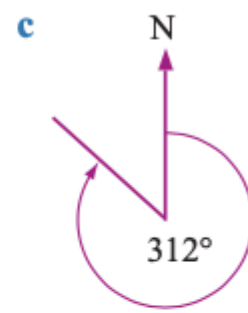
g 322°T
j 012°T



h 157°T
k 201°T



i 239°T
l 285°T



4 a i 90°
iv 22½°

ii 45°
v 22½°

iii 45°
vi 67½°

b i 022.5°T
iv 157.5°T
vii 292.5°T

ii 067.5°T
v 202.5°T
viii 315°T

iii 135°T
vi 247.5°T