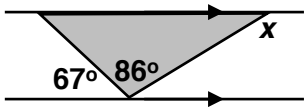
Bearings

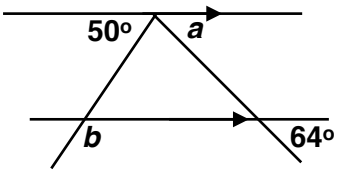
Starter

1. **(Review of last lesson)** Find the marked angles:

(a)



(b)



2. The clockwise angle from North to East is 90^o. Write down the clockwise angle between North and the following points on the compass:

(a) W

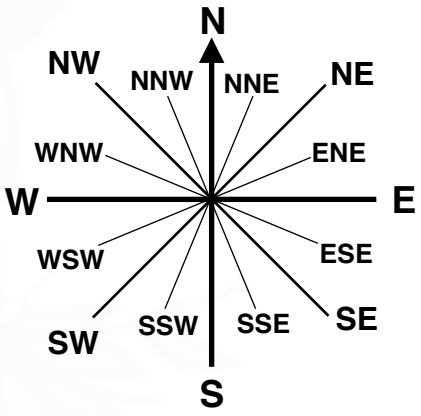
(b) S

(c) NE

(d) SE

(e) NW

(f) WSW



N.B. There is 45^o between N and NE.
There is 22.5^o between N and NNE.

Notes

Bearings are angles that are measured ***clockwise from North***. They are used to give directions and to help pinpoint the location of places.

3 rules of bearings

1. Bearings are measured from the North line.
2. Bearings are measured in the clockwise direction.
3. Bearings are expressed with 3-figures so 60^o becomes 060^o.

E.g. 1 Which points on the compass are the same as these bearings:

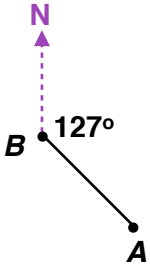
(a) 000^o (b) 225^o (c) 337.5^o

Working: (a) N

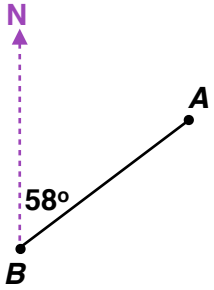
Geogebra: **Bearings**

E.g. 2 Write down the bearing of A from B.

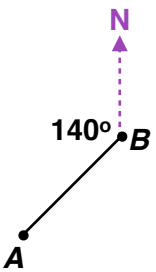
(a)



(b)



(c)



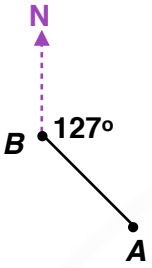
Working: (a) 127^o

Back bearings

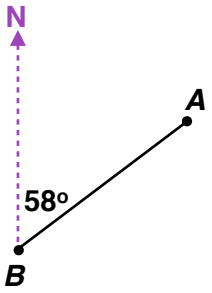
The bearing of A from $B \Rightarrow$ start from B (draw the North line at B)

E.g. 3 For the diagrams of below, calculate the bearing of B from A.

(a)

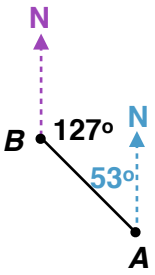


(b)



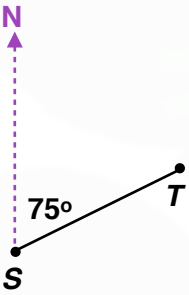
Working: "the bearing of B from A" — the "***from*** A" means start from A.
Therefore, a North arrow must be drawn ***from*** A.

(a) By allied angles, the angle between the line AB and A's North arrow is $180 - 127 = 53^o$.
So bearing of B from A is $360 - 53 = 307^o$

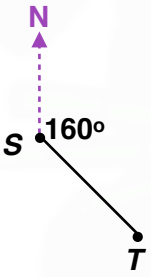


E.g. 4 What is the bearing of S from T?

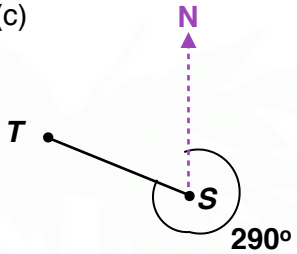
(a)



(b)

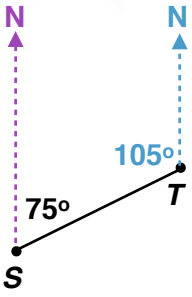


(c)



Working: "the bearing of S from T" — the "***from*** T" means start from T.
Therefore, a North arrow must be drawn ***from*** T.

(a) By allied angles, the angle between the line ST and T's North arrow is $180 - 75 = 105^o$.
So the bearing of S from T is $360 - 105 = 255^o$



E.g. 5 If the bearing of P from Q is 063^o, what is the bearing of Q from P?

Hint: draw a diagram.

Video: Bearings
Video: Back bearings

Solutions to Starter and E.g.s

Exercise
p198 Ex 11.3 Qu 1-10

Summary
3 rules of bearings:

1. Bearings are measured from the North line.
2. Bearings are measured in the clockwise direction.
3. Bearings are expressed with 3-figures so 60^o becomes 060^o.

Back bearings — the bearing of A from $B \Rightarrow$ start from B (draw the North line at B).

Textbook answers (only available during a lockdown)