

Bearings

Starter

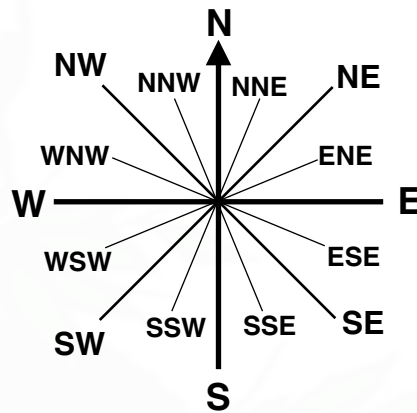
1. **(Review of last lesson)** A regular polygon has 17 sides. Calculate the size of one **interior** angle. Give your answers to 1 d.p.

Working: Exterior angle = $\frac{360^\circ}{n} = \frac{360^\circ}{17} = 21.17^\circ$ (2 d.p.)
 Interior angle = $180^\circ - 21.17^\circ = 158.8^\circ$ (1 d.p.)

2. **(Review of previous material)** The clockwise angle from North to East is 90° . 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 |

- Working:**
- | | |
|-----|--|
| (a) | 270° |
| (b) | 180° |
| (c) | 45° |
| (d) | 135° |
| (e) | 315° |
| (f) | $270^\circ - 22.5^\circ = 247.5^\circ$ |



N.B. There is 90° between N and E.
 There is 45° between N and NE.
 There is 22.5° between N and NNE.

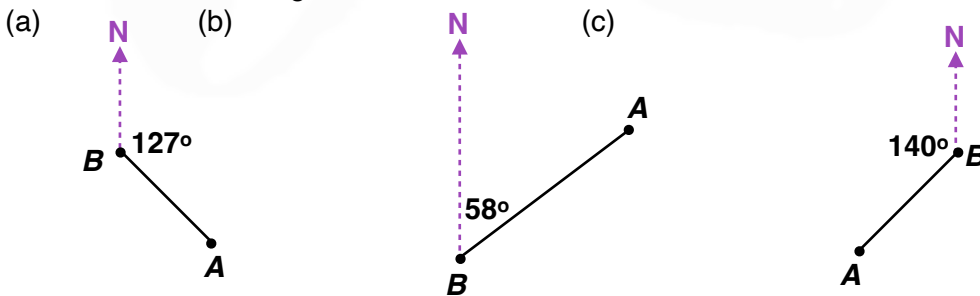
- E.g. 1** Which points on the compass are the same as these bearings:

- | | | |
|-----------------|-----------------|-------------------|
| (a) 000° | (b) 225° | (c) 337.5° |
|-----------------|-----------------|-------------------|

- Working:** (a) N (b) SW (c) NNW

Geogebra: [Bearings](#)

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



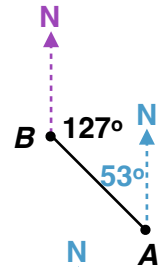
- Working:** (a) 127° (b) 058° (c) $360^\circ - 140^\circ = 220^\circ$

E.g. 3 For the diagrams of **E.g. 2(a)** and **E.g. 2(b)** above, calculate the bearing of *B* from *A*.

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

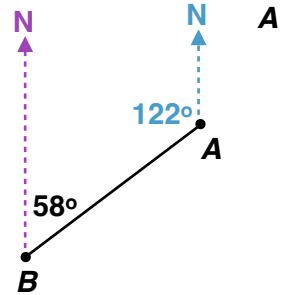
E.g. 2(a)

By allied angles, the angle between the line *AB* and *A*’s North arrow is $180^\circ - 127^\circ = 53^\circ$.
So bearing of *B* from *A* is $360^\circ - 53^\circ = 307^\circ$

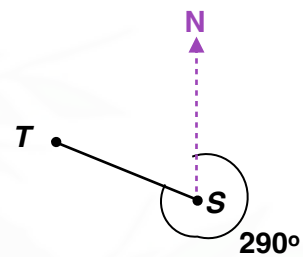
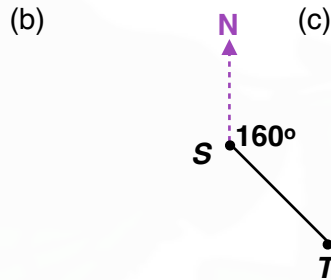
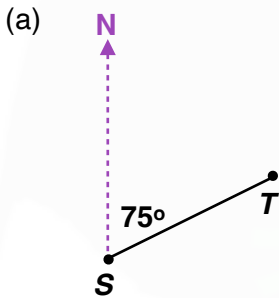


E.g. 2(b)

By allied angles, the angle between the line *AB* and *A*’s North arrow is $180^\circ - 58^\circ = 122^\circ$.
So bearing of *B* from *A* is $360^\circ - 122^\circ = 238^\circ$

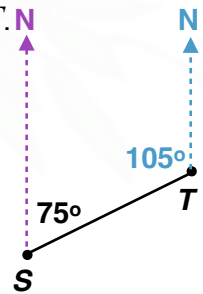


E.g. 4 What is the bearing of *S* from *T*?

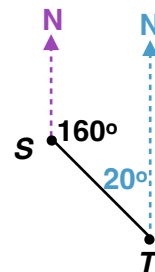


Working: “the bearing of *S* from *T*” – the “*from T*” means start from *T*. Therefore, a North arrow must be drawn *from T*.

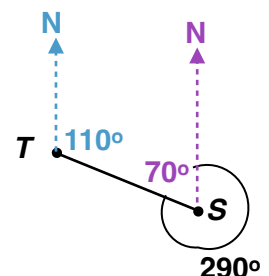
(a) By allied angles, the angle between the line *ST* and *T*’s North arrow is $180^\circ - 75^\circ = 105^\circ$.
So the bearing of *S* from *T* is $360^\circ - 105^\circ = 255^\circ$



(b) By allied angles, the angle between the line *ST* and *T*’s North arrow is $180^\circ - 160^\circ = 20^\circ$.
So the bearing of *S* from *T* is $360^\circ - 20^\circ = 340^\circ$



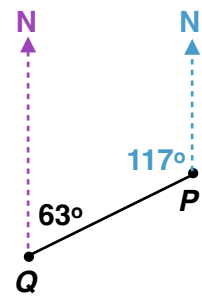
(c) The angle between the line *ST* and *S*’s North arrow is $360^\circ - 290^\circ = 70^\circ$.
By allied angles, the bearing of *S* from *T* is $180^\circ - 70^\circ = 110^\circ$



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

Hint: draw a diagram.

Working: By allied angles, the angle between the line PQ and P 's North arrow is $180^\circ - 63^\circ = 117^\circ$.
So the bearing of Q from P is $360^\circ - 117^\circ = 243^\circ$



Video: [Bearings](#)
Video: [Back bearings](#)

[Solutions to Starter and E.g.s](#)

Exercise

CIMT 8A p198 Ex 11.3 Qu 1-10