MATHEMATICS: BEARING AND DISTANCE

1.

Three locations are shown by A, B and C as shown in the diagram below. If AB = 20 m and BC = 15 m, find:

(a) AC

(b) The bearing of A from C.

2.

A boat sails 150 km on a bearing of 042° and then 250 km due east.

How far is the boat from the starting point?

3.

From a point O in the school compound, Adeolu is 100 m away on a bearing of N35°E and Ibrahim is 80 m away on a bearing of S55°W.

(a) How far apart are both boys?

(b) What is the bearing of Ibrahim from Adeolu in three-figure bearings?

4.

A cyclist starts from a point X and rides 3 km due west to a point Y. At Y, he changes direction and rides 5 km north-west to a point Z.

(a) How far is he from the starting point, correct to the nearest kilometre?

(b) Find the bearing of Z from X, to the nearest degree.

5.

A boat sails 160 km from a harbour P on a bearing of 036° to Q and then 200 km on a bearing of 125° to another harbour R.

(a) What is the distance between P and R?

(b) What is the bearing of P from R?

(c) What is the bearing of R from P?

6.

An aircraft flew 80 km on a bearing of 042°, then 120 km on a bearing of 140°.

How far away is it from the starting point?

What is the bearing of the aircraft from the starting point?

7.

A man drove a car from his office (O), 120 km on a bearing of 135°, and then drove for another 100 km on a bearing of 048° until he reached a town (T).

(a) What is the distance between the man's office and the town?

(b) What is the bearing of O from T?

8.

In the diagram, PQ = 8 m, QR = 13 m, the

bearing of Q from P is 050° and the bearing of R from Q is 130°.

(a) Calculate, correct to three significant figures:

(i) PR

(ii) The bearing of R from P.

(b) Calculate the shortest distance between Q and PR, hence the area of triangle PQR.