



**Task 2**

In a different remote area of Australia the Royal Flying Doctor Service has an aircraft base located at *P*, another aircraft base located at *Q* and another base located at *S*.

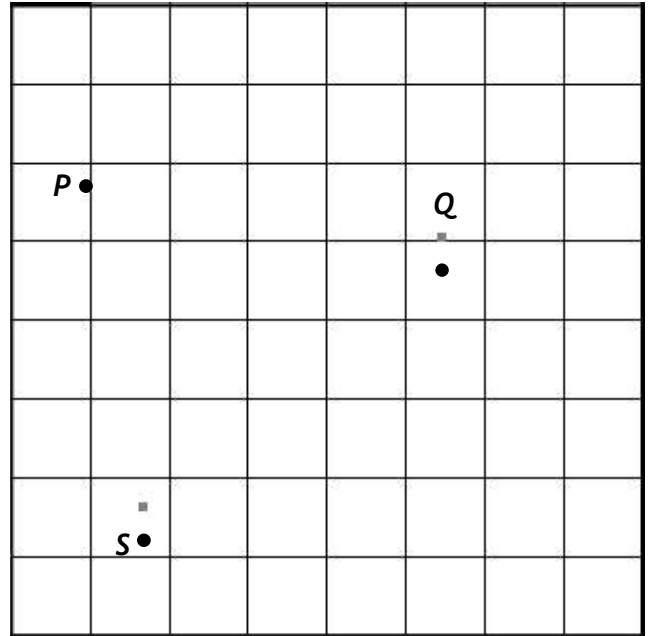
All emergency calls are received at a central call centre and are then transferred to the closest aircraft base.

This map of the area shows the position of the three aircraft bases.

You need to divide the area into three regions so that any emergency is responded to from the nearest aircraft base.

The scale on the map is

“grid square side = 20 km”.



(i) What three lines have you drawn?


(ii) Have these three lines intersected at a common point?


(iii) What do you notice about the distances from the point of intersection to each aircraft base.


(iv) What does the above result indicate to you?


(v) What is the approximate area of each region?

P:       Q:       S:

(vi) The number of emergency calls is consistent for all of the area and you have 168 people overall to staff the three bases. How many staff members do you need at each aircraft base.

P:       Q:       S:

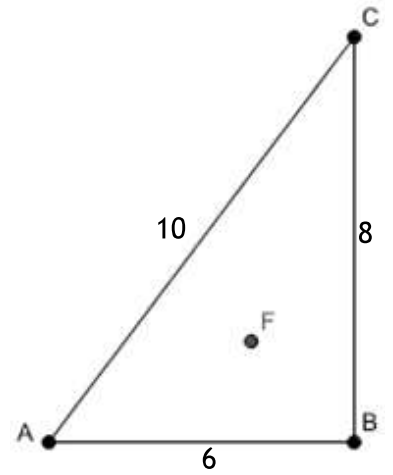


**Task 4**

Three roads, as shown, join three villages  $A$ ,  $B$  and  $C$

A mobile phone mast is to be erected in the area between the villages.

It was suggested that it would be fair to erect it at a point equidistant from the three villages.



(i) Why was it not possible to do so?

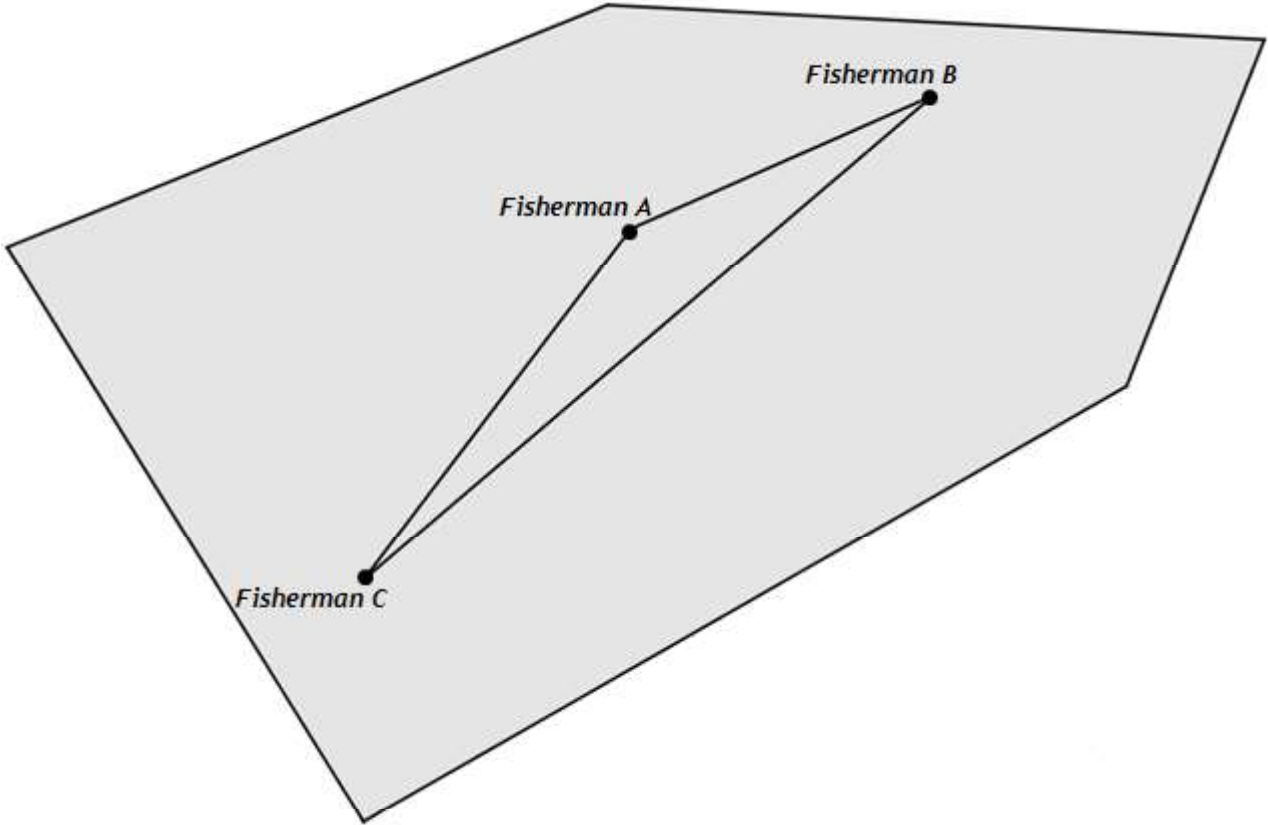

(ii) It was then decided to erect the mast at  $F$ , which is equidistant from the three roads. How far is  $F$  from each road?


Which village is now nearest (as the crow flies) to the mast?


### Task 5

A fishing community has applied to the County Council for planning permission to extend their memorial to those lost at sea. The memorial is located in the park close to the pier (see diagram) and consists of bronze statues of three fishermen. To complete the memorial the community wishes to locate a bronze sculpture of a damaged fishing boat at a point which is the same distance away from the statues of each fisherman.

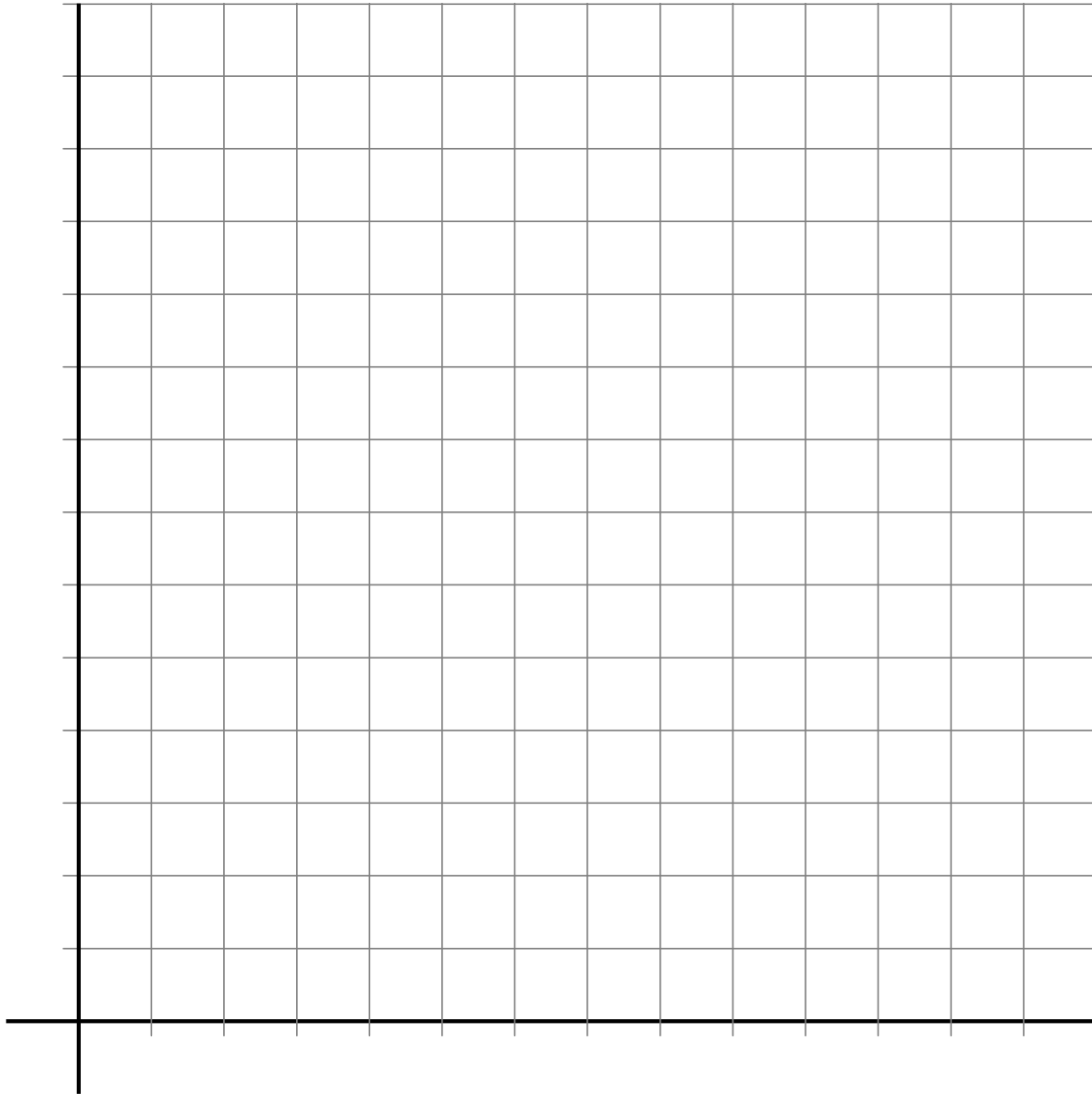
Suggest a geometric reason, using the diagram below, why the County Council might refuse planning permission.

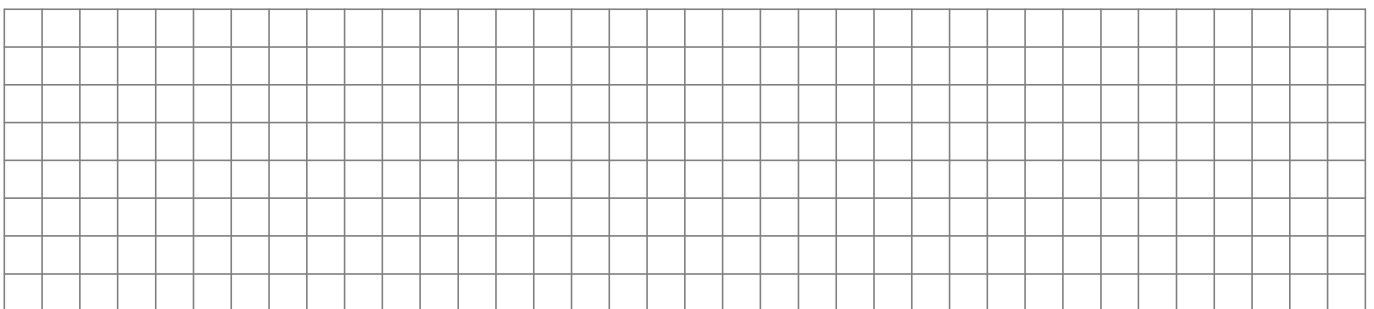
**Task 6**

In an underdeveloped region an Irish aid organisation intends to build a medical clinic to service three villages located at grid coordinates (0,4), (5,1) and (1,1). Each village is connected to the other by a straight road.

What should the grid coordinates for the clinic be in order to locate it equidistant from all three villages?



Is this the best location for the clinic? Give a reason for your answer.



**Task 8**

In a public park the gardener measures the distances between the only three trees using a measuring tape. The distances are 31.83 m, 25.75 m, and 29.27 m. He wishes to fence off a circular play area in which to place swings and have the three trees as part of the perimeter of that play area.

What area of the park will he be fencing off?

